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Occupational identity and competence, occupational environment and quality of life among people with paraplegia post neurological rehabilitation

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A research report submitted to the Faculty of Health Sciences, University of the Witwatersrand, Johannesburg, in partial fulfilment of the requirements for the degree of Master of Science in Occupational Therapy.

Johannesburg

29 May 2025

DECLARATION

I, Legashe Hezekiel Ledwaba, hereby declare that this research report is my own work. It is being submitted for the degree of Master of Science in Occupational Therapy at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at this or any other university.

Signature



29 May 2025.

DEDICATION

In memory of my mother, Nthabiseng Smous- Ledwaba,

I now know that love goes beyond death.

Thank you for being my guardian angel even through this journey.

PUBLICATIONS AND PRESENTATIONS ARISING FROM THE STUDY

None.

ABSTRACT

Introduction

People with paraplegia (PWP) are assumed to achieve community reintegration, return to work and engage in their previous roles and interests following neurological rehabilitation. This study determined PWP's experience of change in occupational identity, competence and of the occupational environment after discharge from Tshwane rehabilitation hospital and if these variables influenced each other and their Health-related quality of life (HRQoL).

Methodology

This cross- sectional quantitative study used a demographic questionnaire, European Quality of life 5- dimensions and 3- levels (EQ-5D-3L) tool and the Occupational Performance History Interview- 2nd Version (OPHI II) tools to collect the data in a semi-structured interview from purposefully selected participants. The data were analysed using STATISTICA 13.2; descriptive statistical and inferential statistical results were obtained.

Results

Most participants' occupational identity and competence were found to be disrupted. Furthermore, the participants' occupational environment was found to be disrupted, creating a hindrance to their occupational performance. Most individuals reported some difficulty in all HRQoL aspects, indicating a lower overall HRQoL. A significant correlation was found between occupational identity and competence and occupational environment while no correlation was found between each of the five HRQoL dimensions and occupational identity, occupational competence and occupational environment.

Conclusion

The results suggest strengthening occupational therapy services at the primary health care level, so community reintegration is better facilitated, focusing on the re-establishment of occupational identity and competence and accessibility within the environment. The in-patient rehabilitation should not only consider the activities of daily living but also other aspects of one's occupational identity and competence.

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Without my participants, this research study was not going to be possible. I send many gratitude to all of them. It is my wish and hope that things go well for them and that they realise that there is still life even after sustaining spinal cord injuries.

To my siblings, George, Mathabiso and Mologadi; thank you for your steady support and love.

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NOMENCLATURE

Operational definitions

Autonomy: Perceived capacity to control, cope and take personal decisions on how a person lives his/her daily life, following his/her own norms and preferences (WHO, 2004).

Community integration: This captures the patient's ability to live, work, socialise with others and enjoy recreation and leisure activities like typical/able bodied others in the community, this also includes social reintegration (Stumbo et al., 2015).

Community participation: Active Engagement in non-domestic, social activities outside of the home (Chang et al., 2013).

Community reintegration: A multidimensional concept with many definitions, but three common themes amongst these definitions are that the patient's time must be occupied with activities, he must have somewhere to live and be able to build and maintain relationships with other people (Hardaker, 2011).

Esteem support: "Support resulting in self-esteem and approval" (Van Leeuwen et al., 2010: 266).

Everyday social support: "Social companionship and daily emotional support" (Van Leeuwen et al., 2010: 266).

Habituation: How a person organises occupational performance into patterns and routines (Taylor, 2017).

Health related quality of life: Dimension of quality of life that allows for comparison of one person's health condition with another (Ishibashi, 2013).

Independence: "Self-directed state of being characterized by an individual's ability to participate in necessary and preferred occupations in a satisfying manner irrespective of the amount or kind of external assistance desired or required" (AOTA, 2002: 660).

Instrumental activities of daily living: Activities to support daily life within the home and community (AOTA, 2020).

Landrum outcome levels: Groupings or categories of patient problems and conditions, which are understood to represent levels of progress along a continuum in the process of rehabilitation (Landrum, Schmidt & Mclean, 1995).

Meaningful and purposeful activities: Activities that are valuable, important to the person and are also goal directed (Radomski, 2008).

Model of Human Occupation (MOHO): Occupation-based model that provides a comprehensive and integrative view of humans as occupational beings and explains how human occupation is motivated, patterned, and performed (Taylor, 2017).

Occupation: Refers "to the everyday activities that people do as individuals, families, and within communities to occupy time and bring meaning and purpose to life" (American Occupational Therapy Association, 2020: 79).

Occupational adaptation: A process and/or outcome of the transaction between the environment, person, and occupation in response to occupational disruption (Kielhofner, 2008; Grajo & Boisselle, 2018)

Occupational competence: The ability to sustain a pattern of occupational engagement that reflects one's occupational identity (Kielhofner, 2008).

Occupational environment: The physical and social aspect of the context in which a person engages in an occupation, and which may facilitate or challenge such occupational engagement (Taylor, 2017).

Occupational identity: "Composite sense of who one is and wishes to become as an occupational being, generated from one history of occupational participation" (Kielhofner, 2008 as cited in Taylor, 2017: 117).

Occupational performance: The dynamic experience of a person engaged in purposeful activities and tasks within an environment (Law et al., 1996).

Paraplegia: The paralysis of a part of the trunk and both lower extremities that results from lesions of the thoracic, lumbar and/or sacral segment of the spinal cord (Pendleton & Schultz-Krohn, 2017).

Performance capacity: Person's capacity for performance (Park et al., 2019).

Participation: Involvement in a life situation (WHO, 2001).

Rehabilitation: Longitudinal process aimed at enabling persons with disability to reach and maintain their optimal physical, sensory, intellectual, psychological and social functional levels to become participating members of society, with access to all the benefits and opportunities of that society (WHO, 2001).

Roles: Aspects of identity shaped by the culture and context that may be further conceptualised and defined by the client and the activities and occupations one engages in (AOTA, 2020).

Spinal cord injury: Damage to the spinal cord leading to motor and/or sensory deficits, and/or autonomic dysfunction lasting more than three days post injury (Pendleton & Schultz-Krohn, 2017).

Support in problem situations: Instrumental, informational support, and emotional support in times of trouble" (Van Leeuwen et al., 2010: 266).

Quality of life: "choosing and participating in occupations that foster hope, generate motivation, offer meaning and satisfaction, create a driving vision of life, promote health, enable empowerment, and otherwise address the quality of life" (Townsend & Polatajko 2013: 381).

Volition: Person's motivation for occupational engagement; this is a universal human desire to do things and is shaped by one's life experiences and context (Taylor, 2017)

Abbreviations.

Abbreviation	Full name
ADHD	Attention Deficit Hyperactivity disorder.
ASIA	American spinal injury scale.
bADLs	Basic activities of daily living.
COPD	Chronic Obstructive Pulmonary disease.
EQ-5D-3L	European Quality of life 5 Dimension-3 Level.
HRQoL	Health related quality of life.
IADLs	Instrumental activities of daily living.
ICF	International classification of functioning, disability and health.
ISNCSCI	International standard for neurological classification of spinal cord injury.
MDT	Multidisciplinary team.
MOHO	Model of Human Occupation.
MVA	Motor vehicle accident.
NTSCIs	Non traumatic spinal cord injuries.
OPHI II	Occupational performance history interview II.
OTPF4	Occupational Therapy practice framework fourth version.
PHC	Primary health care.
PWD	People with disabilities
PWP	People with paraplegia
PWSCI	People with spinal cord injuries.
QoL	Quality of life.
RTW	Return to work
SCIs	Spinal Cord Injuries.
TRH	Tshwane Rehabilitation Hospital
TSCIs	Traumatic spinal cord injuries.
VAS	Visual Analogue Scale.
WHO	World Health Organisation

CHAPTER 1 INTRODUCTION

1.1 Introduction to the problem

Spinal cord injuries (SCIs), either traumatic or non-traumatic, cause disability that greatly contributes to the global health burden (Pilusa, Myezwa & Potterton, 2021). Spinal cord injuries have considerable impact on the identity of a person and challenges their competence in performing everyday activities that are purposeful and meaningful to them. This then changes a person's life trajectory in many ways which implies that they must adapt, restructure and/or rethink their life in general.

In 2016, the global prevalence of SCIs was between 3400- 4090 injuries per million, with between 1940- 3190 injuries per million in Sub- Saharan Africa (GBD 2016 Traumatic Brain Injury and Spinal Cord Injury Contributors, 2018). The World Health Organisation (WHO) (2024) reported that 15.4 million of people live with SCI globally. South Africa has a comparable incidence as Sub- Saharan Africa, with 1940- 3190 injuries per million (Alves, Pilusa & Mashola, 2022). In Gauteng, 998 people were admitted into a public rehabilitation hospital between 1 January 2018 and 31 December 2019, of which 386 were people with SCIs (PWSCI) (Alves et.al., 2022). The prevalence of SCIs in this public rehabilitation hospital was 38.67% (Alves et al., 2022). No recorded statistical data were found for PWSCIs seen in Gauteng private rehabilitation hospitals. From this account, SCIs are prevalent in South Africa as a substantial number of these cases are seen in the public health care n Gauteng and require rehabilitation. This highlights the need for the occupational therapy profession to conduct research studies to enhance evidence-based practice implemented in neurorehabilitation services for PWSCIs.

Research studies in medical sciences has advanced interventions for PWSCIs in that they increased life expectancy (Silvestri, 2017), however, what these medical advances have failed to address is the quality of life (QoL) and well-being of PWSCIs in those additional 30-60 life years due to challenges such as access to and re-establishment of participation in meaningful, and purposeful occupations that foster health, and well-being (Silvestri, 2017). This is coupled by socio-economic challenges, which are a reality for many people from the developing countries.

Barclay et al. (2016) noted that the long-term health and well-being of PWSCIs remains an area of significant concern in developing countries such as South Africa. Adaptation to and acceptance of the disability as well as the prevalence of secondary health conditions such as pain, pressure sores, spasms, bowel and bladder problems, and mental health problems are factors that further affect the health and well-being of PWSCI over their life course (Pilusa et

al., 2021). Health and well-being are linked to the functionality and independence of a person which are central to the occupational therapy paradigm.

The occupational therapy professional role is to promote health and wellbeing by creating opportunities for people with SCIs to engage in a variety of purposeful and meaningful occupations to enable the three levels of doing (occupational participation, occupational performance, and occupational skill) described by Kielhofner (Taylor, 2017). Furthermore, occupational therapists enhance the contextual environment through adaptations and modifications to support engagement in these occupations post-discharge (Whiteford et al., 2020). This is supported by WHO's International Classification of Function, Disability and Health (ICF) seminal work that proposes four components of human functioning that may be affected by a SCI and that require attention during rehabilitation (WHO, 2001). These include the i). The body function and structure, ii). Activity (execution of tasks) and iii) Participation (involvement in life situations) and iv). The environment (WHO, 2001). Addressing these components of human functioning enable health and well-being and ultimately the QoL (WHO, 2001). This prompted WHO Rehabilitation 2030 Call for Action which, among other things, calls for collection of the rehabilitation data to optimise service delivery for people living with SCIs. Thus, the scope of occupational therapy profession best suits this call to optimise service delivery among people with spinal cord injuries (PWSCI).

1.2 Background and setting of the problem

Tshwane Rehabilitation Hospital (TRH), in Gauteng, is one of two national public sector rehabilitation hospitals in South Africa that offer specialised in-patient rehabilitation. Tshwane rehabilitation hospital has a bed capacity of 64 of which 21 beds are in the spinal unit. There are 9 occupational therapists in the occupational therapy unit. The hospital does not offer community-based rehabilitation, this is offered by therapists working at the primary health care (PHC) clinics. There are currently limited community based-rehabilitation services offered at the PHC level; it is for this reason that one of the goals of the National Health Insurance is to strengthen the PHC. A number of PHC clinics in Gauteng are expected to serve a large catchment area, although they are not well equipped and are short staffed of occupational therapists. Of 125 PHC clinics in Gauteng, only 9 of them offer rehabilitation services. (Maseko et al., 2024). Lieketseng et al. (2017) noted that the healthcare professionals are not well equipped to implement PHC and receive insufficient training on how to address the social health determinants of health and wellness. Additionally, the healthcare system underappreciates the advocacy role and activities that health and rehabilitation professionals could take to address these socioeconomic health factors (Lieketsang et al., 2017).

After receiving the ethical clearance from the university of Witwatersrand human research ethics council (Wits HREC) and TRH research committee, a review of the TRH patient records between 2022- 2023 by the researcher, revealed that 144 new patients were admitted to the Spinal unit for health conditions and/or injuries that included: Guillain barre syndrome, Tuberculosis spine, gunshot injuries, stab wounds, motor vehicle accidents, falls, and myelopathies. Of those admitted, 80 were people with paraplegia (PWP). This specialist hospital mostly admits patients from Gauteng and Gauteng's neighbouring provinces such as Limpopo, Mpumalanga, and North- West. These patients subsequently were discharged upon finishing their individual in-patient rehabilitation regime. Most patients seen in this public sector hospital are from low socio-economic situations and live in under-resourced communities. Patients that are discharged from TRH into the care of their local PHC facility are supposed to be seen at TRH only for the services which their PHC facility cannot offer (National Department of Health Referral Policy, 2020). Due to the challenges in providing community-based rehabilitation at their PHC facility, the discharged patients rely on TRH for most of their needed health services. Tshwane rehabilitation hospital (TRH) is a specialised hospital and not tailored to offer PHC services.

Tshwane Rehabilitation Hospital (TRH) has adopted an outcome- based approach to guide the rehabilitation of PWSCIs. The outcome-based approach allows for the quantification of the PWSCIs rehabilitation gains while also ensuring that PWSCIs are included in the conversation to determine their desired rehabilitation goals. Moreover, the use of the outcome measure makes it possible to measure the obtained outcome of the rehabilitation services provided against the cost of the said rehabilitation service (Ingham et al., 2025). The rehabilitation outcome measure called the Landrum outcome levels, as described in a seminal work by Landrum, Schmidt and Mclean (1995) is used. The Landrum outcome levels comprise six distinct outcome levels of functioning that an individual follows sequentially as they recover from or adapt to the health condition. The outcome levels represent the progress of patients in the process of rehabilitation and their regaining of functionality in daily occupations (Landrum et al., 1995). See, Appendix C. for the detailed description of each Landrum outcome level.

Upon the admission of PWP, using a client- centred approach, the multidisciplinary team (MDT) together with PWP set goals/outcomes for their rehabilitation progressing from their current level of functioning. As Evans and Krasny-Pacini noted, client- centred goal setting promotes PWP's motivation, adherence to rehabilitation process, and overall satisfaction with the rehabilitation process (2017). Upon their discharge (ending of the rehabilitation regime) the goals/outcomes set at admission are reviewed and they are placed on a relevant discharge Landrum level of outcome.

Most of PWP achieve Level 4 (community reintegration) on discharge, meaning that they are expected to potentially reintegrate back into their community and transition to their previous lifestyle (Landrum et al., 1995). Fewer PWP achieve Level 5 on discharge and are potentially expected to reintegrate back into the community and continue with their employment (Landrum et al., 1995). Although PWP may reach level 4 or 5 upon their discharge, according to Walder and Molineux (2017), the onset of disability has a wide range of consequences for individuals' lives, including a psychological adjustment to their disability that influences their ability to continue in or adapt to previously established occupational identities and competences. Of course, PWP will have to pass through all the stages of loss as described in the seminal work of Kubhler- Ross (1969) as they are negotiating the re-establishment of their new occupational identity and competence. At first, they would deny the situation of living with a disability, and as time passes, they would be depressed as they realise that they may not recover their mobility. After some years, for some, they will accept the situation and start to find ways to establish their new occupational identities while renegotiating their new occupational competences.

1.3 Problem statement

Challenges in re-establishing occupational performance and skills, associated with Kielhofner's defined levels of doing, are raised during most outpatient reviews and follow-up sessions at least 4 months after the discharge from the SCI rehabilitation programme for PWP. These challenges include feelings of occupational incapacity; not being able to re-establish critical and expected life roles and routines which enable enactment of personal responsibilities; and a sense of not being able to meet environmental expectations and personal goals and desires in the range of occupational domains such as work, instrumental activities of daily living (IADL), leisure, and social participation. The raised challenges may be exacerbated by the limited resources and environmental challenges in their communities as well as their low socio- economic backgrounds.

These raised challenges appear to be consistent with possible disruption of occupational identity and difficulties with re-establishing occupational competence and adapting to the disability in their community context (occupational environment). This suggests that these variables are not being sufficiently addressed during the in-patient occupational therapy offered to these patients or that the timing of intervention is not optimal in their recovery process. This also suggests that an improvement to the existing community occupational therapy services at the PHC level is needed to continue with reintegration services, as well as vocational rehabilitation. Rispel noted that although PHC as a social justice policy, paired with other legislative policies and resource allocation strategies, the current PHC have not been

enough to reach transformation aims to improve population health (2016). As such, the presence of occupational identity disruption, poor occupational competence and lack of environmental adaptation may affect health, well- being and overall health related quality of life (HRQoL) in the longer term.

1.4 Research questions

Two research questions have guided this study:

1.4.1 What changes do PWP experience in occupational identity, occupational competence and of the occupational environment post SCI rehabilitation within TRH?

1.4.2 Is there an association between occupational identity, occupational competence, occupational environment and HRQoL post SCI rehabilitation within TRH?

1.5 Research aims and objectives

1.5.1 Research aim

To determine the nature and extent to which PWP experience changes in occupational identity, occupational competence and occupational environment post SCI rehabilitation and if these variables influence each other and their HRQoL.

1.5.2 Research Objectives of the study

Three research objectives guided this study in addressing the research questions.

1.5.2.1 To determine the occupational identity, occupational competence and occupational environment of PWP after sustaining a SCI.

1.5.2.2 To determine the HRQoL of PWP after sustaining a SCI.

1.5.2.3 To determine if there is an association between occupational identity, competence, environment and HRQoL among PWP.

1.6 Justification of the study

The findings of the study will inform the rehabilitation team on the extent to which recently disabled PWP due to a SCI, experience a change in their occupational competence, occupational identity and occupational environment, as well as if there is any association between these three variables and HRQoL, thus facilitating the attainment of the 3rd sustainable goal of the UN: good health and wellbeing. This will inform whether additions or changes to the occupational therapy process and programme are required to facilitate the re-

establishment of occupational identity and occupational competence during the in-patient or out-patient rehabilitation phase. This will include whether the occupational therapy process needs to strengthen the addressing of the psychosocial issues that may result due to the changes they are experiencing, this may be low RTW among PWP. By addressing these issues, inequality in labour participation faced by PWD will be tackled to ensure that PWD are taught vocational skills or the RTW to their previous jobs is facilitated while also advocating for their accessible and sustainable communities. Thus, these will ensure that the 8th and 10th UN sustainable goals are realised as inequality in job distribution and/or discrimination would be circumvented.

Furthermore, the results of this study may identify the gaps in facilitation of community integration needed after discharge as transition and psychosocial adjustment to the disability takes time and experience to be established and consolidated. Through addressing the inaccessible environments as part of the community reintegration, occupational therapists would be facilitating the attainment of the 11th UN sustainable goal which aims to secure sustainable communities Moreover, the findings of the study will expand knowledge and understanding of community re-integration of PWP into the community and the extent to which occupational identity, occupational competence and occupational environment affect well-being, and the overall HRQoL especially in under-resourced contexts.

1.7 Organisation of the research report

This short report is organised into five further chapters as follows:

Chapter 2 provides a critical review of the current professional knowledge and literature about occupational identity; occupational competence associated with Kielhofner's model of human occupation which is used as the occupational therapy lens for this study. Spinal cord injury epistemology, global and national profile of PWP will be discussed, factors influencing HRQoL as well as disruption in occupational identity, occupational competence and occupational environment will be included.

Chapter 3 describes the methodology of the study, the population and sampling of participants and the tools used to collect the data, namely the Occupational Performance History Interview II (OPHI II) and the European Quality of Life 5 Dimension-3 Level (EQ-5D-3L). The ethical considerations as well as how the data were analysed will also be described.

Chapter 4 provides the statistical findings of the research. It delivers results pertaining to the demographic information, occupational identity, occupational competence, and settings as well as HRQoL.

Chapter 5 discusses the findings of the study according to demographic information, occupational identity, occupational competence and occupational environment, HRQoL and how occupational competence, occupational identity and occupational environment correlates with HRQoL. This chapter points out how these study's findings relate to existing research and highlights its strengths and limitations.

Chapter 6 draws conclusions based on the results of the study. It also makes recommendations for TRH, as well as suggestions for service delivery and further research.

CHAPTER 2 LITERATURE REVIEW

2.1 Introduction

This chapter sets forth a critical review of literature that discusses and deliberates on the topics relevant to and highlights the need for and relevance of this study.

References used to compile this literature review were sourced from the following search engines: Science Direct, PubMed, EBSCO, Research gate, Cumulative Index of Nursing and Allied Health Literature (CINAHL) and Google Scholar. Medical, occupational therapy and rehabilitation related literature from 1995 to 2024 were reviewed, although older seminal articles were also included as they contained the original information pertaining occupational performance and occupational identity. The key words used to search the literature were: Occupational therapy, Spinal cord injury, Paraplegia, Model of human occupation, occupational identity occupational environment, occupational competence, health- related quality of life, and community integration,

This Chapter has been structured to include literature on the Model of human occupation in so far as it relates to occupational identity, occupational competence and occupational environment, the three variables examined in this study. Subsequently, the topics of SCI, community integration, occupational identity, occupational competence, occupational environment and how they impact HRQoL are discussed. Lastly, a conclusion that identifies the gap in current clinical knowledge draws on all the discussed topics in relation to the problem statement, research questions, research aims, and objectives of this study has been set out.

2.2 Model of Human Occupation

It is imperative to start this literature review by defining the term ‘occupation’ as most of the core terms in the study are constructed from it. As such, occupation refers “to the everyday activities that people do as individuals, families, and within communities to occupy time and bring meaning and purpose to life” (American Occupational Therapy Association [AOTA], 2020: 79). The Model of Human Occupation (MOHO) was developed by Kielhofner in the 1980s to explain humans as ‘occupational beings’, how people choose occupations to participate in, perform the chosen occupations in their environments, and maintain the daily occupations to achieve a sense of competence and identity. This model has been revised over the years based on research and critical debate and discourses (O’Brien, 2017). Thus, the MOHO is an occupation-based model that provides a comprehensive and integrative view of humans as occupational beings and sets out to explain how human occupation is prompted, patterned, and performed (Taylor, 2017), all aspects of importance when providing services

to persons newly disabled from a SCI. Thus, Kielhofner's definition of occupations in MOHO clearly outlines how people choose their occupations; what motivates them to choose those occupations; how they participate in those occupations and how the environment influences their occupational participation. An understanding of these factors allows an attempt to explore the process to re-establish the disrupted occupational competence and occupational identities to be possible.

The MOHO recognised that many factors beyond impairments in sensorimotor, cognition, and functions contribute to difficulties in everyday occupational performance (Taylor, 2017). Other factors such as the physical and social environment, personal motivation, the ability to maintain routines and social and occupational roles are all important to allow for successful occupational performance (Taylor, 2017). As such, the model described three interacting elements critical to occupational performance: performance capacity, volition and habituation (Taylor, 2017).

Volition refers to the person's motivation for occupation; this is a universal human desire to do things and is shaped by one's life experiences (Taylor, 2017). Volition is further influenced by thoughts and feelings that reflect a person's values and beliefs (Taylor, 2017). Volition assists in understanding why a person chooses to do what they do. Volition further takes cognisance of the interests and personal causation of an individual (Park et al., 2019). Personal causation refers to what one believes to be their capacities in relation to daily occupations and their effectiveness in carrying out the activities they must and desire to do (Park et al., 2019) and are intrinsically linked to feelings of occupational identity and competence which are challenged when newly disabled. Thus, a client- centred approach which is a central feature of occupational therapy philosophy, is important because it allows a person to set rehabilitation goals that represent their volition. Clients are more likely to be proactive in their rehabilitation if they are actively involved in the therapeutic process (Littooij et al., 2022). This is consistent with the goal setting theories that advocate for patients to set goals for themselves and be active participants in their rehabilitation. Volition is linked with habituation which is another inner characteristic that facilitates occupational performance.

Habituation refers to how a person organises occupational performance into patterns and routines (Taylor, 2017). The patterns and routines are shaped by one's roles and habits which are largely influenced by one's social and cultural context and the environment (Taylor, 2017). Roles are functions that one chooses to ascribe to, and they greatly determine one's occupational identity. As such, a person's behaviour would be determined by these very same roles as the social environment dictates. On the other hand, habits are the learned ways of doing routine things and are influenced by the social and physical environment and they unfold

automatically (Taylor, 2017). Habits influence how one would go about performing their roles and routines which are familiar to the person. Disturbances of habits will impair how one would perform their roles and habits, thus disrupting one's occupational identity. Illnesses and disabilities, or even environmental changes may affect one's habits. Habituation and volition are also affected by performance capacity, which undergoes change when a disability occurs.

Performance capacity alludes to the person's internal abilities for performance (Park et al., 2019). The ability to perform is dependent on the mental and physical abilities of a person and how they are used and facilitated in occupational performance (Taylor, 2017). The musculoskeletal, neurological, cognitive, cardiopulmonary systems, and other bodily systems are called on when a person performs an occupation (Taylor, 2017). One's context is also factored and may provide a wide and variety of opportunities but also challenges to occupational performance (AOTA, 2020). If the person does not have the required performance capacity to engage in the desired occupations, then occupational performance would not be possible or would have to be adapted in some way (Firfirey & Hess-April, 2014). Occupational therapists can enable occupational performance and the reestablishment of occupational competence and occupational identity through occupational adaptation (Hopkins et al., 2024) when one's performance capacities are affected. Thus, Kielhofner postulated that a meaningful occupational engagement is individually decided, prompted by volition (interests, thoughts, and values); moulded by habits and roles (habituation); permitted by performance capacity (physical, cognitive, and psycho-social function); and applied within occupational environment be it within physical, social, economic, cultural and political environments (Taylor, 2017).

The MOHO thus provides a theoretical lens that helps occupational therapists understand and address issues related to occupational competence and occupational identity (Taylor, 2017). Occupational performance, occupational competence and occupational identity are regarded as the three domains on which occupational adaptation is based (Taylor, 2017), a process which newly disabled persons must undertake to grieve their occupational loss and re-establish their occupational performance within their residual occupational capacity. Occupational adaptation is therefore the process of re-constructing a positive occupational identity and achieving occupational competence within the context of one's physical and social environment following a disability (Kielhofner, 2008).

2.3 Occupational Identity

The literature pertaining to identity is vast and the term is reported in the fields of psychology, anthropology, sociology, criminology, and others (Vignoles et al., 2011). In psychology, Occupational identity refers to an intentional recognition of oneself as a worker (Skorikov & Vondracek, 2011). In occupational sciences and occupational therapy, identity in relation to occupation was first used by Christiansen (1999) and it was further developed and coined 'occupational identity' by Kielhofner in around 2002.

Christiansen in his seminal work proposed that occupational performance contributes to the construction of one's identity and is the primary means to communicate a person's identity, concluding that "when we build our identities through occupations, we provide ourselves with the contexts necessary for creating meaningful lives, and life meaning helps us to be well" (1999:547). Occupations occupy both space and time in a person's life (Hansson et al., 2022), thus, there is no better way of identifying oneself than through the occupations in which one engages. Kielhofner defined 'occupational identity' as a "composite sense of who one is and wishes to become as an occupational being, generated from one's history of occupational participation" (Kielhofner, 2008 as cited in Taylor, 2017:117).

It is held that human occupation and identity play crucial roles in human existence (Rudman & Dennhardt, 2008), as it is theorised that life is measured in time and place that is occupied by the doing of occupations (Hansson et al., 2022). Chaplin and Andrewson (2019) maintain that socially, a person is defined as who they are based on what they do. If life is viewed according to what occupations one does, clearly it is the nature of engagement in occupations that construe one's identity (Alsaker & Josephsson, 2003). This view of the consequential link between occupation and identity supports the assumption that the loss of the ability to perform one's meaningful or purposeful occupations will, therefore, also threaten one's identity.

In the analysis of occupational identity concept, Hansson et al. (2022) deduced that the notion of occupational identity is characterised by the interconnectedness between temporal, contextual and meaningful dimensions of a person's daily activities. This means that occupational identity is embedded in the interconnections of doing, becoming, and belonging which happens in the present moment and on which the future can be predicted (temporal); it is also dictated by the environment context in which one finds themself. Furthermore, to influence occupational identity, the occupation one does must be meaningful and purposeful to the person (Hansson et al., 2022). Therefore, occupational identity is rooted in the occupational roles enacted and relationships one has, the person's values, self- concept and personal desires and goals (Kielhofner, 2009). The composite sense of the effectiveness for doing things which one finds important, valuable, interesting, satisfying and obligated to do,

builds positively towards one's occupational identity (Taylor, 2017). Occupational identity is further established and supported when one has familiar life routines and inhabits an environment that supports and facilitates the fulfilment of one's occupational performance (Taylor, 2017). Therefore, what one identifies oneself to be or wants to become is developed from one's occupational performance history (Kielhofner, 2009). This was supported by the study by Andrew, Phillipson and Sheridan (2019) that found that dementia affected the occupational routines of the elderly, which then led to a disrupted sense of occupational identity. The disrupted occupational identity was further exacerbated by the socio- cultural expectations or demands put upon an elderly person which they are no longer able to meet (Andrew et al., 2019).

The impact of sociocultural ideologies in the construction of occupational identity are important and should not be overlooked. Asaba and Jackson (2011) noted that socially formed and perpetuated discourses that have been internalised become part of the reality of specific social groups. and can be observed. These can be observed because the social threads influence how one chooses occupations that they identify with and value, are the same social threads that dictate what occupations are socially acceptable within those groups (Phelan & Kinsella 2009). Thus, our occupational identity does not solely originate from ourselves, it is also influenced by the social domains. Phelan and Kinsella (2009) asserted that although occupational identities are socially constructed, they are not accidental as human agency takes place in the formation thereof. This means that human agency allows a person to negotiate, resist and choose what occupations one wants to ascribe to or identify with. This is further supported by Unruh (2004) who concurred that occupational identity may either be conformist or individualistic in a sense that one may choose to conform or reject the social norms in establishing their occupational identity.

The construction of occupational identity is described as a continuous process throughout the life course, with an individual feeling a sense of accomplishment after constructing an occupational identity that they find meaningful and appropriate to them (Phelan & Kinsella, 2009). This is said to be the case because occupational identity is grounded in familiar routines, and allows one to realise one's unique goals, potentials, limitations, and desires. Once occupational identity is established, it is reformed and transformed into a part of one's own cognition and it becomes difficult to change (Phelan & Kinsella, 2009). It then serves both as a means of self-definition and as a blueprint for upcoming action (Kielhofner, 2008). This then explains why changes in health and life circumstances may lead to a crisis that necessitates the need to re- establish occupational identity (Rudman & Dennhardt, 2008). A change in health or life circumstances or becoming disabled may radically change

occupational performance, especially in those occupations that are central to identity and meaning (Unruh, 2004).

Occupations that are central to one's occupational identity and life's purpose and meaning are not only productive occupations such as one's work. Unruh et al. (2002) noted that occupational identity can also be conceptualised through the occupations of self-care, and leisure.

In her seminal work, Unruh described leisure occupation as central to one's identity, as having restorative function and assistive in coping with life stressors (2004). Moreover, leisure activities facilitate social connectedness, mental and physical well-being (Costalonga et al., 2020). These leisure activities, just like self-care activities, differ from one person to another and form part of one routine and roles, thus are part of one's occupational identity.

The importance of self- care occupations differs from one person to the other, and most of the productive occupations would depend on occupational competence in the self-care occupations. Occupational identity is linked with occupational competence because one must be competent in performing the occupations that contribute to the building of one's occupational identity.

2.4 Occupational competence

Although the concept of competence has many definitions that have been contested (Watson et al., 2002), Beckets (2004) asserted that the concept deserved clear articulation and attention as it elucidates the ongoing relationship between knowing how to act and knowing why to act, both of which impact perceptions of how well humans act. Several definitions of competence have been put forward, with Lum (2004) asserting that competence relates to the quality of doing that meets the standards that are agreed upon that such doing should meet. The standard should be articulated and agreed upon by the society in which such doing is performed or done. Sandberg and Pinnington (2009) suggested a three-fold social conceptualisation of occupational competence which includes: firstly, a collective understanding of what the action is about; secondly, mutual engagement in the action made possible by established norms; and finally, a communal repertoire of resources available to all actors. The definition by Sandberg and Pennington clearly illustrates that occupational competence is inclusive of both personally and socially defined standards. Thus, competence is the extent to which coordination of occupations are accepted and reliable across the environment (Holahan, 2014).

Christiansen (1999), in his seminal work, made a connection between occupation and competence. Therefore, he termed the ability to engage in meaningful activities, roles, and

routines successfully over time as occupational competence which he reported as being critical for occupational participation, a sense of self, and life satisfaction in general (Taylor, 2017). Kielhofner (2008) in MOHO referred to occupational competence as the ability to sustain a pattern of occupational engagement that reflects one's occupational identity. Thus, when a person can organise their occupational life to meet their basic responsibilities and the standards, they have set for themselves or are set by significant others and meet the obligations that come with their occupational roles, they will achieve a satisfying and interesting life. They are then said to have achieved occupational competence that reflects their occupational identity (Ishibashi et al., 2013). How people organise their lives is based on what they value. Thus, significant predictors of occupational competence are the person's values, occupational domains, and the environmental impact on the meaningful and purposeful activities one must perform (Taylor, 2017).

There is a significant positive link between self-care functioning and occupational competence. Empirical evidence shows that patients that are more independent in self-care activities have higher levels of occupational competence, whereas those who are more dependent in self-care activities have lower levels of occupational competence (Tkach et al., 2023). Furthermore, Tan et al. (2010) in their study defining occupational competence and occupational identity found that occupational competence was achieved not predominantly through functional improvement, but through enhancing personal states of self-efficacy in fulfilling valued occupations. However, the state of self-efficacy would not suffice in achieving occupational competence, as a suitable environmental context for occupational performance (Tan et al., 2010) and other factors necessary or occupational performance are required.

2.5 Occupational environment

The social model of disability has long held the view that barriers in the physical, economical, sociocultural, political environment can restrict participation among PWD even more than their individual impairments (Goering, 2015; Hammel et al., 2015). The environment is defined as the physical and social aspect of the context in which a person engages in any given occupation, and which serves to facilitate such occupational engagement (Taylor, 2017). The Merriam Webster dictionary provided a broader definition of the environment, here environment is defined as the circumstances surrounding someone or something; the circumstances and factors influencing someone or something's development, progress, health, etc (2024). The environmental conditions cannot be separated from an individual and they affect every occupation a person may engage in. Thus, the transactional nature of a person, occupation and the environment must be always taken into consideration. The same

is true for the occupational environment as the place within the environment at which specific occupations occur.

Environmental barriers to occupational engagement are significant predictors of loss of occupational identity and competence. Tkach et al. (2023) reported that a negative association between the environmental impact and occupational competence indicates that people who encounter more environmental barriers in daily life also experience lower levels of occupational competence. This stands to reason because if one, for instance, is not able to access the bathroom, bathroom based self- care activities would not be performed in a socially prescribed manner. It follows then that occupational competence would not be achieved in a socially appropriate manner. Empirical evidence also supports this assertion as an inaccessible environment, inadequate social support, and lack of reliable transportation have been found to interfere with recovery of independent occupational performance at home and in one's community (Greysen et al., 2017; Nizeyimana et al., 2024; Tessier et al., 2024). Thus, one would fail to achieve occupational competence. This is further supported by WHO ICF that maintained that environmental factors can either be facilitators or barriers influencing functioning and disability (WHO, 2008). It is, therefore, important that when determining one's occupational identity and competence, the influence of the environmental context must be determined as well.

2.6 The impact of ill health or disabilities on occupational identity and occupational competence

Paraplegia, after SCI, leads to a disability that completely alters how PWP perform their meaningful and purposeful occupations. This means that PWP must adapt or find alternative ways to participate in activities that require the use of their lower limbs, and most activities need to be executed from a seated position, which may exclude desired activities that require lower limb involvement, such as running and riding a bicycle. This indeed changes one's life trajectory and identity. As Taylor reported, people living with chronic disease and disability experience lower levels of occupational competence, occupational identity, and quality of life when they cannot complete activities that are relevant or meaningful to them (2009). The onset of an illness/disability and its symptoms which compromise occupational engagement defines the onset of disruption in occupational performance, occupational competence, and occupational identity. This is clearly seen, for instance, where a worker's role is disrupted by the symptoms that impact on the worker's capacity to competently and safely engage in their work and leads to a worker staying home, thus the identity as a worker becomes 'fractured' (Andrew et al., 2018). From the disruption of the productive roles as a worker, one may have a sense of lost purpose and ability which further disrupts their occupational identity and

occupational competence. No study was done previously to determine occupational identity and occupational competence of PWP, as a result, occupational identity and occupational competence in conditions and illness that are disabling would be reviewed below to explore how illnesses and disability affects disrupt them.

In the qualitative study to determine the impact of dementia on occupational competence, occupational identity, and occupational participation while in paid work, Ritchie et al. (2017) and Andrew et al. (2018) studied how the symptoms of dementia interrupted workforce participation. The symptoms of Dementia affected the worker's ability to carry out habituated routines as well as the cognitive skills and psycho- social functions needed to complete the job tasks (Andrew et al., 2018). The outcome of such poor occupational performance resulted in three options: the termination of the work contract for some workers, other employees were put on medical retirement while others voluntarily discontinued their employment as they lacked confidence and considered their contribution meaningless (Andrew et al., 2018). The latter workers wanted to avoid bothering coworkers and felt embarrassed by the decline in their performance capacity (Andrew et al., 2018). Some workers were not willing to go for a medical retirement and accepted the reasonable accommodations that were offered to them so that they still experienced occupational competence in their adjusted work roles (Ritchie et al., 2017) and thus did not lose their occupational identity. These studies clearly indicated how dementia disrupts occupational competence and thus occupational identity.

In a quantitative cross- sectional study by Tan et al. (2020), occupational competence and occupational identity were examined in the context of recovery of mental health care users (MHCUs) from Schizophrenia. It was found that negative symptoms of Schizophrenia such as avolition and anhedonia, resulted in a person to have difficulty motivating themselves to perform occupations that are meaningful and purposeful to them or to aspire to a positive future (Tan et al., 2020). Furthermore, Schizophrenia tends to influence these MHCU's judgement of performance and self-efficacy in that they either overestimate or underestimate their occupational competence and capacity, resulting in poor occupational performance in that work context, thus occupational competence and occupational identity are disrupted (Tan et al., 2020).

Furthermore, in quantitative cross- sectional study conducted by Paley Altit, Shor and Maeir (2019) compared occupational identity and competence among adults with and without Attention Deficit Hyperactivity disorder (ADHD). It was found that ADHD had a negative impact on the development of occupational identity (Paley Altit et al., 2019) consistent with the common features of ADHD which included low self-efficacy, pessimistic attitudes, self-stigma, and low self-esteem (Paley Altit et al., 2019).

In the article that evaluated the evidence for occupational therapy intervention to reestablish occupational identity after Traumatic Brain Injury (TBI), Cotton (2012) acknowledged that the long- term symptoms of a TBI contributed to the disruption of the survivors' occupational identity. Cotton (2012) reported how the experience of identity disruption can affect the TBI survivors: "The experience of identity disruption can leave a person in a tenuous state of uncertainty about who they were, who they are, and who they project themselves to be in the future'' (Cotton, 2012: 271). The same can be said about the recovery after a stroke. Stroke leads to physical limitations in occupational performance which are aggravated by challenges in the physical, social, cultural, political, and economic environment which in turn affect the stroke survivors' perception of themselves as occupational being, and thus their occupational identity (Martin- Saez & James, 2021).

The study by Cunningham (2016) who explored occupational identity of the homeless adults found that homeless adults had stigmatised occupational identities ascribed by the society, and most of the homeless people did not want to associate with such stigmatised occupational identities (Cunningham, 2016). In this case, the social ideologies of occupational identity had overpowered the homeless adults' human agency that may have allowed them to voluntarily choose their occupational identity.

From the above information, it is clear that the onset of illness, disability and a change in life circumstances can radically disrupt one's occupational identity and competence if one's meaningful and productive occupations, especially those that are central to the person's identity (Unruh, 2004) are compromised. Spinal cord injury is one of the life changing circumstances that may lead to the limitation in occupational performance and ultimately to the disruption in occupational competence and occupational identity, and it is the intention of this study to determine the disruption of occupational identity and occupational competence among PWP.

2.6 Persons with Spinal cord injury

2.6.1 Prevalence, epidemiology, and profile of persons with spinal cord injuries

Before discussing the impact of SCI on occupational performance, it is imperative to discuss the prevalence, epidemiology, and the overall profile of persons with SCI.

In most parts of Africa, road accidents are the main cause of SCIs, owing to poor infrastructure, poor and unsafe transport systems, and people travelling in open lorries (Kassahun Bekele et al., 2023). This was supported by a study conducted in Abuja, Nigeria that indicated that 60.4% of the TSCIs are as a result of motor vehicle accidents (Kassahun Bekele et al., 2023). This is somewhat different to the epidemiological findings in South Africa, where of 386 admitted

PWSCI to Gauteng public hospitals, TSCI as a result of assault were found to be more prevalent than NTSCI (Alves et al., 2023). A recent study in Gauteng reported that most SCIs occurred between T7 and T12 in the lower thoracic spine, leading to paraplegia (Alves et al., 2023).

The universally accepted measure to diagnose SCI is the American Spinal Cord Association impairment scale also known as the ASIA scale or International Standards for Neurological Classification of Spinal Cord Injury (ISNCSCI) (Pendleton & Schultz-Krohn, 2017). The ASIA scale purports to provide standardised measures for the diagnosis of the SCI by determining the neurological level as well as myotomes and dermatomes affected. Classic symptoms of SCI involve partial or complete impairment of sensory function and/or motor function below the level of injury (Pendleton & Schultz- Krohn, 2017). Complete injury or total paralysis results from a complete interruption of the ascending and descending nerve tracts below the level of the lesion (Pendleton & Schultz- Krohn, 2017). This means that both motor and sensory functions below the level of lesion are lost. In an incomplete injury, there is some preservation of the sensory or motor nerve pathways below the lesion level (Pendleton & Schultz- Krohn 2017).

Paraplegia is the result of injury below the T1 segment of the spinal vertebrae (Abu Mostafa et al., 2020). Paraplegia thus, refers to the paralysis of a part of the trunk and both lower extremities that results from lesions of the thoracic, lumbar and/or sacral segment of the spinal cord (Pendleton & Schultz-Krohn, 2017). There is a strong relationship between the functional status outcome and the area and nature of the lesion on the spinal cord segments (Nas et al., 2015). Thus, medical care and medical prognosis, rehabilitation and functional prognosis of SCI depends on the level of lesion as well as the sensory and motor impairments which lead to the associated physical and functional limitations (Nas et al., 2015; Pendleton & Schultz-Krohn, 2017). Secondary complications of SCI further affect the overall functional prognosis after SCI.

The secondary complications of SCI are not necessarily suffered because of the SCI, but because of living with a disability (Rimmer et al., 2011). The secondary complications that are often suffered by PWP may include pain (neuropathic and musculoskeletal), pressure sores, spasms, pneumonia, bowel, and bladder problems, autonomic dysreflexia, osteoporosis, mental health problems and sexual problems (Pilusa et al., 2021). These complications may affect occupational competence which would in turn affect one’s occupational identity. For instance, pain is reported to be the most common and invasive secondary complication which affects other areas of life such as performance of the activities of daily living (ADLs), functional mobility, mental health, and personal behaviour (Pilusa et al., 2021). Due to pain, PWP may

take some days off from work and, in the worst scenarios, PWP can ultimately end up resigning from work because of the constant debilitating pain. Resigning from work would mean that some roles that make up PWP occupational identity, such as taking care of the family, would suffer as a result. Moreover, the constant debilitating pain can lead to mental health issues, as Pilusa et al. noted (2021), which has the potential to affect a person's occupational competence and occupational identity. Silvestri reported that the reduction in pain leads to a decrease in depressive symptoms among PWSCI (2017). Thus, PWPs functional status and their overall occupational identity and occupational competence become disrupted by the onset of the SCI and require attention in the rehabilitation process.

2.7 Functional status of people living with paraplegia and an outcome- based approach to rehabilitation

2.7.1 Functional status after spinal cord injury

A SCI is life-changing and devastating in that it leads not only to physical limitations but to emotional challenges and influences the vocational and economic aspects of a person's life. Spinal cord injuries lead to a chronic disability which impacts one's occupational participation across the life course (Silvestri, 2017). Silvestri also reported decreased occupational engagement in a variety of environments, less diversity in occupational participation and fewer social relationships because of living with this chronic disability (Silvestri, 2017). This disability also significantly impacts areas of occupational performance such as functional mobility and basic activities of daily living (bADL) (Donnelly et al., 2004). The bADL impacted by SCI may include dressing, bathing/showering, personal hygiene, grooming and toilet hygiene, bowel and bladder management, and functional mobility (transfers) and wheelchair ambulation (Abu Mostafa et al., 2020). Difficulties to perform these occupations independently may put a burden on the caregivers and affect patients' quality of life (Abu Mostafa et al., 2020).

People with paraplegia are reported to perform better in bADL, bowel and bladder management compared to people with quadriplegia, due to the preservation of the upper limb motor control that enables them to adapt to new ways of occupational performance (Benedicto et al., 2022). Furthermore, PWP typically have a good functional mobility using a wheelchair, and greater independent ambulation has been noted indoors and although significant difficulty has been reported outdoors because of architectural barriers (Benedicto et al., 2022). In all, a good functional independence for PWP is expected after rehabilitation unlike the expectation for people with quadriplegia. This implies that a positive re- establishment of occupational identity as far as bADLs performance is expected after rehabilitation, but what about their occupational performance in other occupational domains such as work, iADL, leisure, and social participation?

Although occupational identity does not only depend on whether one is working/employed or not, productive work/employment has an important implication in construction of one's occupational identity (Silvestri, 2017). This is because of the amount of time consumed by the work and the personal benefits that arise from working. In South Africa, it is reported that the majority of the employed individuals spend 40- 45 hours at work per week (Cowling, 2024). This clearly indicates that one's work consumes much of a person's time and all other occupations revolve around one's work schedule. As such, work structures one's life and greatly contributes to one's occupational identity. People living with SCI are stigmatised and are often perceived by society as being incompetent to engage in occupations such as those associated with paid employment and competitive leisure activities as compared to the able-bodied population (Silvestri, 2017). Despite progressive labour laws facilitating and supporting the employment of people with disabilities globally, this misconception continues to marginalise people living with SCI in the workplace and may exacerbate feelings of hopelessness, financial and social losses leading to depression (Silvestri, 2017).

It is important to note that not everyone who has sustained SCI would suffer from depression. Depression is not linked to SCI itself; however, the serious functional and occupational loss predisposes people with SCIs to depression, a grief reaction and psychological adjustment to the disability (Nas et al. 2015). Occupational therapists may help a PWP circumvent the development of depression through re-establishing occupational competence and identity by facilitating independence, assisting the patient re-engage with their roles in society and ensuring that they use their residual function to the full capacity (Nas et al., 2015). Establishing the employment role and community reintegration are the primary outcomes of rehabilitation (Abu Mostafa et al., 2020). From these, the deduction can be made that SCI rehabilitation employs an outcome- based approach and extends far beyond in-patient care.

2.8 Outcome- based approach for spinal cord injury rehabilitation

An outcome- based approach is a globally accepted approach for the inpatient rehabilitation process (Joseph, 2011). A client centred and outcome-based approach uses goal-setting theories which allow patients to set rehabilitation goals for themselves. Goal setting has been defined as the complex process of establishing or negotiating the rehabilitation goals to enhance the client's rehabilitation outcome and autonomy (Levack et al., 2015). Goal setting is thought to motivate the patient, change behaviour and attitude towards rehabilitation (Littooij et al., 2022). Thus, the goal setting approach allows for the explicit identification of the reasons for rehabilitation. As the goals are set by the patient or the relevant caregiver on behalf of or together with the patient, the goals should be meaningful to the patient otherwise the patient would not be motivated to engage in the goals that are not personal (Littooij et al., 2022). The

goals set are mostly short term and physically oriented goals. A patient's initial goal setting meeting should be held a few days after the patient's admission, and they are settling in the ward. The final goal review meeting would be held towards the patient's discharge and the date for this review meeting would be determined during the first goal setting meeting. In determining the date for the review, each case is treated differently based on the factors such the diagnosis, prognosis and others. This outcome- based medical model approach is a widely used approach in physical rehabilitation, and it is based on the seminal work of Landrum, Schmidt & Mclean (1995). This approach guides rehabilitation, it motivates the patient and measures the patient's progress during rehabilitation (McClain, 2005). Landrum's approach provides six outcome levels of function that progresses along a continuum in the process of patient's rehabilitation (Landrum, Schmidt & Mclean, 1995). (See Appendix C). At the initial goal setting meeting held by the multidisciplinary team (MDT) together with the patient, the patient's current level of functioning is determined by looking at the patient's current functionality, and a historical review of their occupational performance and competence (Littooij et al., 2022). People with paraplegia typically tend to achieve level IV and level V at discharge and are expected to reintegrate back to the community and/or return to their jobs (Joseph, 2011).

2.9 Community integration as an outcome after spinal cord rehabilitation and its influence on the occupational identity and occupational competence

Community integration is regarded as one of the final outcomes of rehabilitation of PWP after SCI and it is indicated by successfully engaging in desired and meaningful community-based activities. Community integration is reported to be a multidimensional concept and does not only look at the patient's physical reintegration to the community but considers all other contextual factors that may facilitate and challenge participation in all desired activities (Hardaker, 2011). Community integration includes social reintegration, thus, the patient's ability to live, work, socialise with others and enjoy recreation and leisure activities like typical/able bodied others in the community (Stumbo et al., 2015). Mobility and accessibility plays a crucial part in enabling community integration; an accessible community environment means that a wheelchair user would be able to navigate their environment, to experience and obtain services that are important to enable participation in life activities (Stumbo et al., 2015). The importance of accessibility is emphasised by the universal design which reiterates that all buildings, environments and products should be designed in such a way that they would be accessible to all individuals including those individuals living with the disability (Lid, 2014). Regardless of the government's support for the implementation of universal design principles, the majority of wheelchair users face difficulties in community reintegration particularly in accessing their communities, workplaces, and possible employment opportunities (Craig et

al., 2015; Chiwandire & Vincent, 2017). Barclay et al. (2015) also provided that many PWSCIs are socially isolated in terms of community, social and civic life because of contextual barriers. One of the reasons for disregarding these principles may be the fact that South Africa has limited resources which are usually diverted to what is perceived to be the 'pressing need of the larger society', little to no attention is given to the needs of those living with disabilities (Department of Social Development, 2012).

In contrast to the inaccessible community where wheelchair users must reintegrate, the hospital context where PWSCIs are rehabilitated is normally accessible and adapted (Nunnerley et al., 2013). A New Zealand study reported that rehabilitation in a spinal unit with a supportive and adaptive environment does not adequately equip the PWPs with the skills needed for life in the real world (Nunnerley et al., 2013). Thus, unsuccessful reintegration into the community can be emotionally and psychologically debilitating as it is a constant reminder to PWPs about their losses (Budd et al., 2022). Moreover, community integration affects quality of life and participation in crucial life occupations (Budd et al., 2022). A successful community integration would contribute positively to occupational adaptation, reestablishing occupational identity and occupational competence and QoL (Stumbo et al., 2015).

2.10 Quality of life and Occupational therapy

Research in quality of life has been steadily increasing in the last several decades (Van Hecke et al., 2018). Given the broad nature of what makes life to be considered of good quality in the context of chronic health conditions and disability, health- related professionals also have a growing appreciation of the importance of broadening their knowledge concerning the quality of life (Van Hecke et al., 2018). The need to broaden knowledge in this regard has been necessitated by advances in medical care and rehabilitation which has increased the lifespan of patients with chronic illnesses (Addington-Hal & Kalra, 2001). In the context of this study, medical advances have led to an increase in the life expectancy of those who sustain SCI (Silvestri, 2017). However, these advances have failed to address is the quality of life (QoL) and well-being of PWSCI in those additional 30-60 life years due to challenges such as access to and re-establishment of their participation in meaningful, and purposeful occupations that foster health, well-being (Silvestri, 2017).

Occupational therapy and occupational science are based on the theoretical core assumption that occupation and QoL are intrinsically linked, as meaningful and purposeful engagement in occupations promotes QoL and well-being (Brekke et al., 2019). For instance, the following studies indicated that performance of the bADLs is associated with QoL (Mayo et al., 2002; Solomon et al., 2010; Brekke et al., 2019). Thus, Occupational Therapy Practice Framework

4 (OTPF4) has QoL and well-being at its centre confirming that engagement in meaning and purposeful and desired occupations is the core of health and wellbeing (AOTA, 2020).

Quality of life is a significant indicator of human health and well-being that is influenced by physical, mental, and social factors (WHO, 2012). Notwithstanding the amount of research done in QoL, there is still little consensus as to the precise definition of QoL. Thus, there are many definitions of QoL, and each definition reflects the background of its author. Various definitions of quality of life will be explored below.

The World Health Organization seminal work defined QOL as “an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectation, standards and concerns” (1998: 1569). From WHO’s definition of QoL, it is evident that QoL is multidimensional and does not depend only on whether a person has a health condition or disability or not. However, from an occupational perspective, Townsend and Polatajko defined QoL as ‘choosing and participating in occupations that foster hope, generate motivation, offer meaning and satisfaction, create a driving vision of life, promote health, enable empowerment, and otherwise address the quality of life” (Townsend & Polatajko, 2013: 381). This definition puts QoL as emanating from occupational performance that is meaningful and purposeful. The definitions by WHO (1998) and Townsend and Polatajko (2013) suggest that QoL is individually determined and looks at different factors affecting the individual on a day-to-day basis. Additionally, these definitions are also in line with the definition of QoL provided in the OTPF4 (AOTA, 2020). According to the OTPF4, QoL is a “Dynamic appraisal of the client’s life satisfaction, hope, self-concept, and socioeconomic factors” (AOTA, 2020: 66).

When health professionals measure QoL, emphasis is placed on the physical, psychological and functional components of wellbeing that may be affected by health condition-related factors (Baron et al., 2019). Thus, QoL determined in health professionals, has been termed health- related QoL (HRQoL). The term HRQoL is often used interchangeably with the term QoL (Baron et al., 2019), but HRQoL is a dimension of QoL that allows for comparison of one person’s health condition with another (Ishibashi, 2013). Health-related quality of life is a useful indicator of overall physical and mental health status of an individual and the impact of health status on quality of life (Yin et al., 2016). Therefore, HRQoL measures QoL as affected by the state of the individual’s health and well- being. In the study conducted to investigate the quality of ADL task performance among patients with chronic obstructive pulmonary disease (COPD), it was found that patients suffering from COPD experience a decreased ability to perform bADL tasks causing diminished HRQoL (Bendixen et al. 2014). Nayak et al. (2017) conducted a study to determine HRQoL among cancer patients. In that study, poor HRQoL was reported

because of poor physical and societal functioning among other factors (Nayak et al., 2017). Tembe et al. (2021) determined HRQoL among children with cancer and found that children experienced occupational deprivation which then led to poor HRQoL. It is worth noting that social participation is related to and influenced by socio-economic factors that also influence Qol. (Nutakor et al., 2023).

Socio-economic factors have also been reported to be a significant predictor of QoL with those with higher socio- economic status reportedly having a higher QoL (Nutakor et al., 2023). In poor socio- economic contexts, the QoL of those living with disabilities is further disadvantaged by structural barriers and lack of employment (Nutakor et al., 2023). Upon sustaining SCI, people tend to lose their current employment which then disrupts their flow of income (Swart et al. 2023). Empirical evidence shows that maintaining employment after SCI remains low and this has a negative impact on the HRQoL (Swart et al., 2023). People living with SCI can still contribute to an open labour market and barriers to access need to be dismantled so as to improve their overall QoL and HRQoL in turn (Swart et al., 2023).

From these accounts, HRQoL is multifactorial, and it is not only affected by ill- health but also by loss of participation in meaningful, purposeful and economic activities as well as environmental factors. Moreover, poor socio- economic factors are reported to compound ill-health and contribute to poorer HRQoL. This is evident in reports that point out that one of the major contributing factors to secondary health conditions such as depression in people living with SCI is exacerbated by lack of employment (Khazaeipour et al., 2015).

Health related quality of life is reported to be easily measured, and there has been a rapid development of HRQoL measures in health care (Addington-Hal & Kalra, 2001). Moreover, as the growing recognition of the importance of understanding the impact of ill- health or lack of well- being without illnesses, it makes it imperative that we understand HRQoL and its measurements better.

2.11 Measuring occupational competence, occupational identity, occupational environment and health- related quality of life

2.11.1 Measuring Occupational competence and identity

Occupational therapists need to assess the client's past and present occupational narrative, and through understanding and the use of clinical reasoning assist the client develop their future occupational narratives (Cotton, 2019). This means that the client's past and present occupational identity and occupational competence must be assessed so that if there is any disruption, occupational adaptation can be facilitated (Walder & Molineux, 2017). The client's occupational environment has to be determined too as, to a larger extent, environment influences occupational performance (Taylor, 2017). It would then be through occupational adaptation that occupational competence and, thus, occupational identity would be retained or re-established (Walder & Molineux, 2017).

The Occupational Performance History Interview (OPHI II) (Appendix D) is one of the standardised and comprehensive semi- structured tools that can be used for this purpose (Taylor, 2017). The OPHI-II was developed to gather information about an individual's past and current occupational functioning and has an occupational competence, occupational identity and occupational environment scales (Kielhofner, 2004).

Occupational Performance History Interview (OPHI II) consists of three parts: i) semi-structured interview, which explored the client's life story; ii) evaluation scales, which measure the client's occupational identity and occupational competence, and the impact caused by their occupational environment; and iii) the narrative curve that outlines the client's life story over time and critical events (Hemmingsson et al., 2017). The OPHI II tool has standardised and semi- structured interview questions that enables the collection of qualitative information as well as standardised scales that enables quantitative documentation of occupational identity, occupational competence, and occupational environment (Kielhofner et al., 2004).

The semi- structured interview prescribed for this tool is organised into the following thematic areas: "Activity/Occupational Choices, Critical Life Events, Daily Routine, Occupational Roles, and Occupational Behaviour Settings" (Kielhofner et al., 2001: 261). The information obtained from the scales can then be transferred onto the standardised scales to provide quantitative data (Kielhofner et al., 2004).

Research on the internal validity of the OPHI II tool has proven that the tool can be used across different populations, cultures, and races. Fit statistics indicated that 226 of 249 subjects (91%) were validly measured by the occupational competence scale, while 139 of 151 raters (92%) used the occupational competence scale validly (Kielhofner, et. al., 2001). For the

occupational identity scale, 228 subjects (92%) were measured validly by this scale and one hundred and thirty-nine (139) raters (92%) used the scale validly, and rater separation was 1.78 (Kielhofner, et. al., 2001). On the other hand, for the occupational setting (environment), 229 subjects (92%) were measured validly by this scale and 139 raters (92%) used the scale validly, and rater separation was 1.94 (Kielhofner et al., 2001). The research on reliability confirmed inter-rater reliability of OPHI-II, the Rasch Analysis of Fit statistics showed that 139 of 151 raters (92%) used the Occupational Competence, Identity, and environment scales and obtained approximately similar degree of severity and leniency (Kielhofner, 2001).

There was no prescribed training on how to use OPHI II as the manual succinctly details how the tool must be administered (Kielhofner et al., 2001). The OPHI II tool has been used in the South African context and was found to be appropriate for this context (Smith, 2020). Although the OPHI- II tool can give an indication of a person's QoL, OPHI- II was not created to measure HRQoL, thus HRQoL is measured using a separate tool.

2.11.2 Health- Related Quality of life

European Quality of Life 5 Dimensions 3 Level Version (EQ-5D-3L) (Appendix E) is a versatile HRQoL instrument that is widely used as a patient reported outcome measure (Devlin et al. 2020). The tool has been used internationally and has been translated into 176 languages (Devlin et al., 2020). The tool has been applied and validated for several health conditions such as anxiety disorders, schizophrenia, and Parkison's disease (Burnand et al., 2021; Prieto et al., 2004; König et al., 2007; Luo et al., 2009). Thus, the EQ-5D-3L instrument is a viable option to measure HRQoL across different patient populations (Khanna et al., 2013; Burnand et al., 2021).

The traditional way of administering this EQ-5D-3L is through pen and paper, however the tool has been adapted for other methods of self-administering such as on the screen (tablet, computer or via web- based platforms) (Burnand et al., 2021). The tool can also be administered by proxy over a telephone or in face-to-face interview whereby factors are read, and the patient verbally selects the item/scale that resonates with them (Burnand et al., 2021). The tool can also be validly administered by text message whereby the researcher texts the numbered factors and sub- factors as they appear in the tool and the participant responds with the numbers (Burnand et al., 2021). This has proved to be helpful in ensuring that the populations in hard-to-reach rural areas can be followed up thus, ensuring that they also received necessary health service to improve their overall health QoL (Burnand et al., 2021).

2.12 Conclusion

The themes that can be deducted from the research problem statements are consistent with problems encountered by PWP as a result of a SCI identified in the literature reviewed above. The literature articulates clearly that a SCI affects occupational performance as well as the role occupational performance plays in the development and maintenance of occupational competence and occupational identity. The challenges of accessibility experienced by PWD posed by the environmental context are also recognised. Furthermore, the social problems that PWD experiences are appreciated in the literature as well. Thus, literature shows that community integration for PWD following a SCI is complex, attainable should rehabilitation services be offered on the primary health care level. Quality of life of PWD and the factors associated with it is also recognised in the literature and associated with occupational performance.

Although PWP achieve the Landrum Outcome level 4 in the structured and well supported environment within the hospital context, it raises a concern as to whether they have indeed achieved the skills and outcomes that qualify them to be on level IV and V and that reflects the ability to reintegrate in their real-life context and RTW. Furthermore, information as to PWP's occupational performance challenges is fragmented as each study focused on a specific problem/challenge/topic. Both occupational identity and occupational competence are compound and multi-layered terms that holistically view humans as occupational beings, and as such, little is understood about the process of occupational competence and occupational identity disruption of PWP. As successful reintegration in one's real-life community and the re-establishment of occupational identity and occupation competence are critical to re-establishing optimal occupational performance aligned to changes in the human system as a result of a SCI, which is of particular concern to occupational therapists.

To the best of my knowledge, there has been no study in the South African context that has investigated occupational competence and occupational identity disruption as well as occupational environment in people following a SCI resulting in paraplegia and returning to under-resourced contexts following in-patient rehabilitation. Furthermore, the studies done internationally investigated occupational competence and occupational identity disruption after health conditions and life circumstances such as stroke, TBI, ADHD and homelessness. As such, the literature review clearly revealed this gap in occupational therapy and occupational sciences literature which affects the continuum of care following hospitalisation and transition into under-resourced communities and real-life occupational performance.

CHAPTER 3 METHODOLOGY

3.1 Introduction

This chapter describes the research design and methodology used in this study to answer the research question and achieve the aim of the study as described in Chapter 1. The methodology and data collection tools were specifically selected to examine the three study objectives:

- To determine the occupational identity, occupational competence and occupational environment of PWP after sustaining a SCI within TRH.
- To determine the HRQoL of PWP after sustaining a SCI within TRH.
- To determine if there is an association between occupational identity, occupational competence, occupational environment and HRQoL among PWP within TRH.

3.2 Study design

The research used a descriptive quantitative cross-sectional design as descriptive data were collected at a single moment in time. Two data collecting tools were used, OPHI II and the EQ-5D-3L. The OPHI II was designed for the data to be collected within semi-structured interview, which allows the translation of the participants' responses to descriptive data using an ordinal scale. The OPHI II tool is MOHO approved tool and allowed the researcher to fully capture the variables determined in this study. While on the other hand, EQ-5D-3L has self-reporting survey forms. Thus, data were collected by interviewing each participant using a standardised interview process defined by the OPHI II which allowed the researcher to fully capture the richness of the participants' responses and recording descriptive data using an ordinal scale on the associated survey forms. The cross-sectional methodology was used in this study to collect data on a homogeneous sample of participants diagnosed with paraplegia from a SCI post discharge and after a period of community reintegration (Cummings, 2017). The four variables investigated in this study were descriptive in nature and were occupational identity, occupational competence, occupational environment and HRQoL. The research explores each variable in the participants but none of these variables were changed in any way.

The investigation of these variables aimed at gaining a better understanding of role of occupational identity, occupational competence and the occupational environment play in the recovery of PWP that would assist in improving the in-patient rehabilitation services rendered to PWP; would facilitate and improve their community reintegration and would also assist in identifying the gaps in the services rendered to PWP post discharge on the PHC platform.

Furthermore, this methodology allowed for the observation of all variables at one point in time (Cummings, 2017). The design allowed for a relatively limited period of data collection and did not involve tracking the participants longitudinally over time (Cumming, 2017).

3.3 Research Setting

Tshwane Rehabilitation Hospital (TRH) is a public in-patient rehabilitation hospital that admits patients from across South Africa as previously mentioned above in 1.2 in Chapter 1. Majority of patients sustained SCIs while they were in Gauteng, predominantly for employment or studying purposes. After completing the in-patient rehabilitation regime, the majority return to their homes in their respective provinces and the neighbouring countries such Zimbabwe and Mozambique. The research participants were recruited across South Africa, but mainly in Gauteng, Limpopo, Mpumalanga, and North- West provinces. Thus, the research setting represents participants from different settings and socio-economic strata within South Africa. Tshwane Rehabilitation Hospital admits diverse patients and mostly from low socio- economic background and without health insurance.

3.4 Research population

The population consisted of the PWP who received rehabilitation at TRH between 2022 and 2023 and who were discharged on a Landrum outcome level 4 or 5.

3.5 Sampling and sample size

Accessing the participants was challenging, only participants that were available and willing to participate in the study were selected. As such, convenience sampling was used to select the participants for this study. Convenience sampling allowed the recruitment of participants that were conveniently accessible to the researcher in the data collection period (Cummings, 2017). The inclusion criteria for sample of participants recruited into this study were:

- People with paraplegia,
- All genders and between the age of 18- 60 years,
- Who achieved level 4 or 5 of the Landrum outcome level upon their discharge from TRH at least 4 months prior to the data collection.

The record of admissions and discharges reviewed in the years 2022-2023 indicated that 88 PWP were admitted to Tshwane Rehabilitation Hospital. Five (5) patients were over 60 years of age, and 5 patients were discharged less than 4 months prior to the data collection. Thus, the target population for this study was 78 participants. A Cochran's formula (Bartlett, Kotrlik & Higgins, 2001) for determining the representative sample size from the target population

was used to determine the optimal sample size. The formula allowed for a confidence level of 95% with a margin of error equal to 0.05. As such, the representative sample size was 72 participants. Since this was a small sample, the confidence level of 90% with margin of error of 10% error was applied. Thus, the required sample size is 35 participants (Bartlett, et al., 2001).

Participants were excluded if they had additional diagnoses such as traumatic brain injuries which may additionally influence their occupational competence, occupational identity, engagement within the occupational environment and HRQoL.

3.6 Participant recruitment

Upon receiving the necessary permission and ethical clearance (Appendices L & M), the researcher liaised with TRH head administration officer who assisted with attaining the Spinal ward admission register to identify suitable prospective participants. The register had the patient sticker with personal information including the patient's contact details. From the register, the researcher obtained both the name and the contact details of the potential participants.

Recruitment to participate in the study entailed contacting the potential participants telephonically and explaining the study and the nature of their participation as per the approved information sheet (Appendix F) and inviting them to participate. Upon agreeing to participate, for some participants around Pretoria and Kempton Park, an appointment date for the researcher to visit the participants' home was scheduled. On the day of the scheduled appointment, the researcher reviewed the participant information sheet (Appendix F), Informed consent (Appendix G), consent sheet to obtain their medical records (Appendix H) and a consent form to audio record the interview (Appendix I) with the potential participant. Explanation in the preferred and understood language was done to ensure that the potential participant made an informed decision about agreeing to participate in the study. For other potential participants that did not reside around Pretoria or Kempton Park, or those who preferred to have telephonic interviews, the first call included introducing myself as the principal researcher and inviting them to participate in the research. The subsequent call was made at the scheduled time and date for obtaining consent as described above and conducting the interview. On the scheduled time and date, the participants were read the consent forms as above noted and subsequently gave verbal consent to participate in the study; verbal consent to have the telephonic interview recorded; and verbal consent for the researcher to obtain and peruse their medical records to obtain information needed to complete the demographic questionnaire. Some participants agreed to have the consent forms as well as their participants information sheet to be sent to them through WhatsApp,

this was done to ensure that the participants had all the necessary information they needed to make an informed decision. Even with these participants, verbal consent was confirmed while others managed to sign the consent forms electronically.

Upon telephonically contacting the prospective participants to invite them to participate in the study, it was found that four prospective participants were deceased while two no longer residing in South Africa. This then brought the total number of participants eligible to participate in this study to 72 participants **(Figure 3.1).**

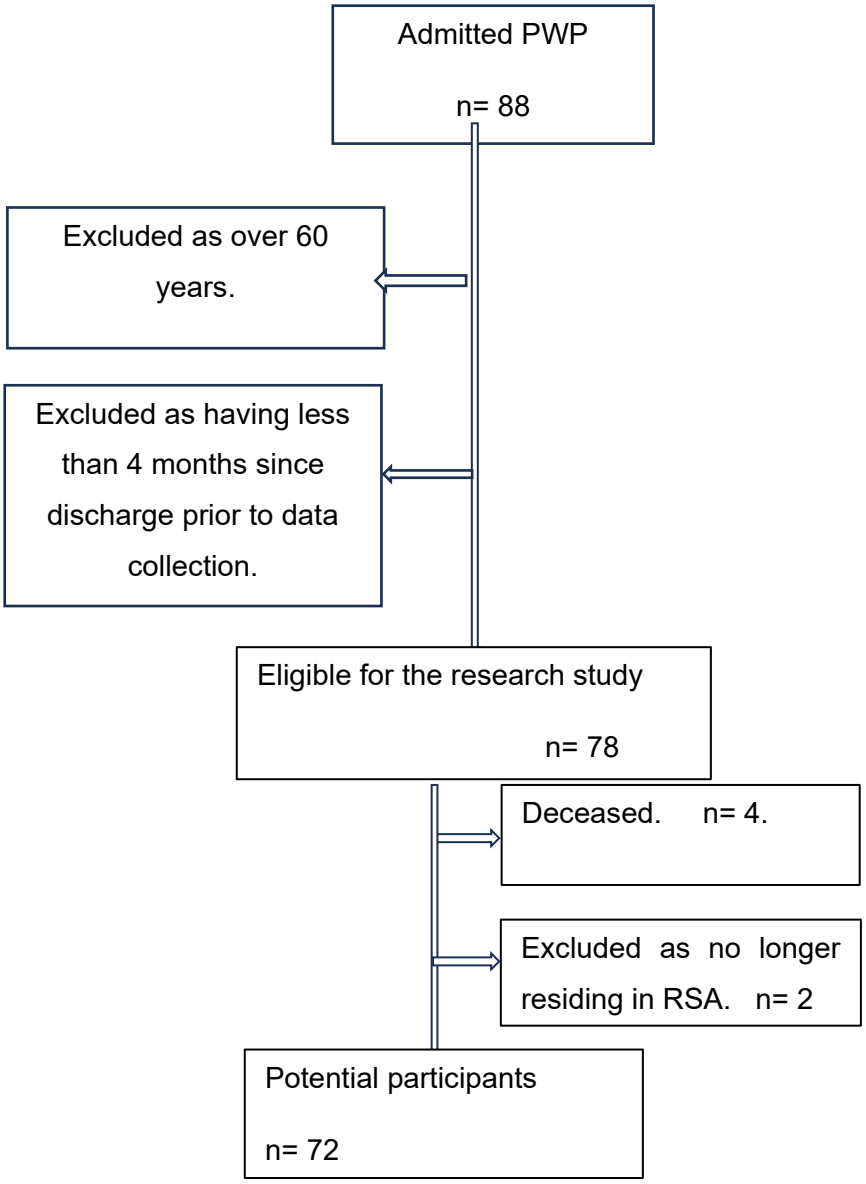


Figure 3.1 Consort flow diagram of the potential participants

Of the 72 potential participants, 29 agreed to participate, 15 refused to participate, either through not respecting the scheduled interview times or not responding to my subsequent calls to go through the consent forms; 28 prospective participants could not be reached as the number on the TRH Spinal register did not go through (voicemail), or the number was recorded incorrectly (missing digits), or the number was wrong (picked up by a person who reported to not know the patient) or the call went through but it was not answered **(Figure 3.2).** A social worker at Tshwane Rehabilitation helped the researcher with some of the correct contact details of the prospective participants.

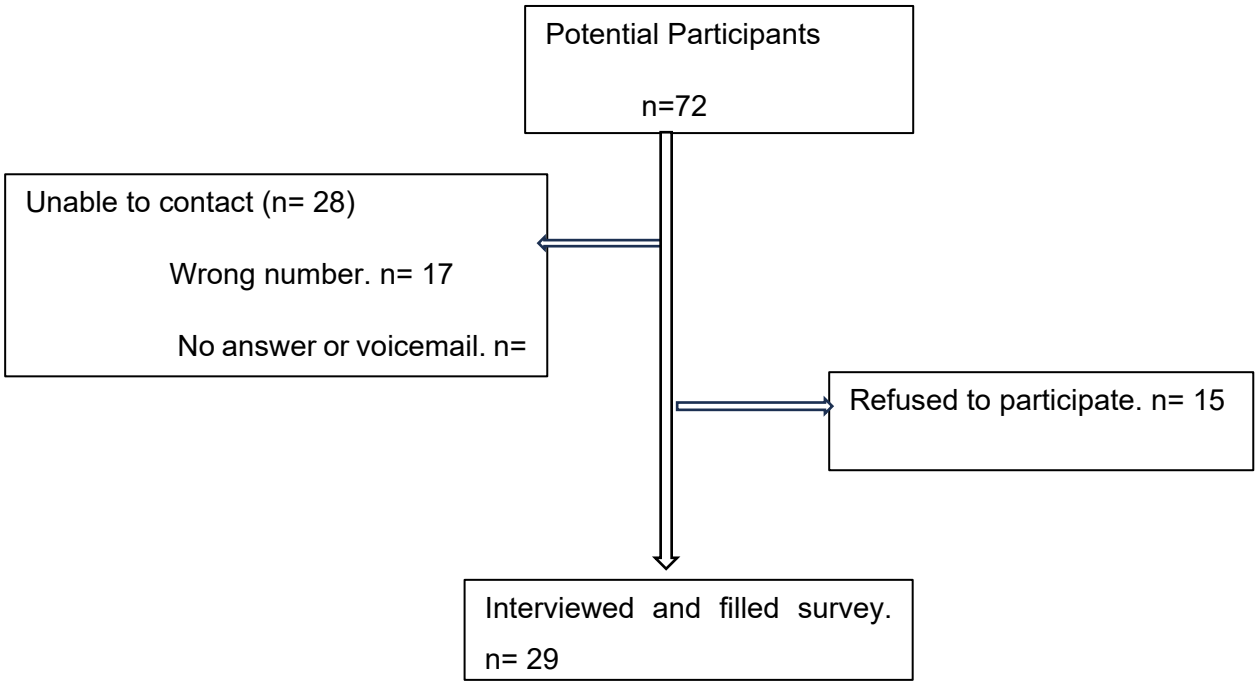


Figure 3.2 Consort flow diagram of participants recruitment

3.7 Data collection process

Data were collected between 22 March and 7 June 2024. Potential participants were contacted to schedule an interview which could be done either telephonically or in person. Face -to- face data collections as proposed in the research protocol were not always possible as most participants had relocated to different provinces across the country because of not being able to afford living in Gauteng anymore.

As noted in 3.6, some participants gave informed consent through signing the consents forms while some consents were given verbally through a cell phone. This was also true for the semi-structured interview and the completion of the EQ-5D-3L tool. When the interview started, the

participant was made aware that the recording had been started. The interview took between 28 minutes and 50 minutes; the difference in duration was dependent on the participant, as some participants were elaborative while others required prompting to provide information. After the interview, the EQ-5D-3L tool was explained and then given to the participant to complete which on average took 3 minutes to complete or give their responses through the cell phone. For participants with WhatsApp, a survey tool document was immediately sent to them on WhatsApp after the interview and the participants would tick the correct box by texting, for example: A-1. The boxes on the EQ-5L 3D were numbered 1,2,3 under each item which was also labelled A, B, C, D, and E. For the participants without WhatsApp, the EQ-5L-3D was read to them, and they chose the correct statement they resonated with. The researcher then ticked the correct boxes for them. Data collection process continued until the population was exhausted.

3.8 Data collection tools

3.8.1 Demographic questionnaire

The researcher designed the demographic questionnaire (Appendix J) specifically for this research to collect background information of the participants. This information included aspects such as age, gender, diagnosis, level of outcome at discharge, occupational and educational status of the participants. Environmental (community) contextual information such as the availability of electricity, running water, and access to recreational centres/resources were included in the questionnaire. Moreover, information pertaining to the type of wheelchair that the participant had on discharge was also included. This information was important as the type of wheelchair affects one's community mobility and accessibility. Information as to whether the participant received vocational rehabilitation or not was included as well. The participant's current work status was explored to determine whether their employer made any effort in implementing the vocational rehabilitation recommendations such as provision of reasonable accommodations or not.

3.8.2 Occupational Performance History Interview (Version. 2.0) (OPHI II).

The OPHI II tool has standardised scales which enables qualitative as well as quantitative documentation of occupational identity, occupational competence, and occupational settings (Kielhofner, Mallinson & Crawford, 2004) (Appendix D). The tool has the following scales which provides ordinal data:

i. Occupational Competence scale which was designed to measure the extent to which a client can sustain a pattern of occupational behaviour that is productive and satisfying (Kielhofner et al., 2004).
ii. The Occupational Identity scale was designed to measure the extent to which a client had internalised a positive occupational identity (Kielhofner et al., 2004). This means whether the client had values, interests, and confidence; saw self in various occupational roles; had a mental image of the kind of the life they desired (Kielhofner et al., 2004).
iii. The Occupational Settings (Environment) scale addressed the environmental impact on the person's occupational life (Kielhofner et al., 2004). Occupational setting was also referred to as occupational environment.

The occupational identity scale included factors that related to identifying a desired occupational lifestyle, having interests, values, obligations, commitments, and goals, expecting success, accurately estimating one's own abilities and limitations, and accepting responsibility (Levanon-Erez et al., 2017). Factors under each scale were scored according to the patient's functioning. The sum of each scale was calculated, and the sum value was then converted to the client measure which was used as a quantitative ordinal figure.

The occupational competence scale included factors relating to the ability to fulfil role expectations, meeting personal performance standards, organising time for responsibility, participating in interests, maintaining a satisfying lifestyle, working towards the goals (Kielhofner et. al., 2004).

The occupational Environment included factors related to how the home environment, work environment and leisure environment supported home life occupational forms, work/studies, and leisure activities participations (Kielhofne et al., 2004).

The tool had a 4-point rating system with: 4 indicating an exceptionally competent occupational functioning; 3 indicating a good, appropriate, satisfactory occupational functioning; 2 indicating some occupational functioning problems; and 1 indicating extreme occupational functioning problems (Kielhofner et al., 2004).

3.8.3 European Quality of Life 5 Dimensions 3 Level Version (EQ-5D-3L)

European Quality of life 5 Dimension 3 Level (EQ- 5D- 3L) self-report survey consisted of 2 parts: the first part consisted of five dimensions (5D) for describing the health states: A: Mobility; B: Usual activities; C: Self-care; D: Pain & Discomfort, and E: Anxiety & Depression. The questions under each dimension were scored on a 3-point scale of: No (1), Moderate (2) and Extreme (3) (Burnand et al., 2021). Thus, the tool provides nominal data. The second part used a Visual Analogue Scale (VAS) to capture the participant's overall health assessment on a scale from 0 (worst health imaginable) to 100 (best health imaginable) (Burnand et al., 2021). The visual analogues scale was not used in this research as of interest in this research study was the exact factors which affected one's overall HRQoL. (Appendix E).

For the participants that were seen face to face, they completed the survey with pen and paper while being monitored by the researcher. The tool was texted to participants with WhatsApp, and they responded accordingly (Appendix K). For participants without WhatsApp, surveys were done over a telephonic call whereby the researcher read each item, and the participants were given a chance to respond with the sub- item that most resonated with them. Depending on the language of the participant, the majority of the participants filled the English version, and few filled the Isizulu version of the test. Permission to use the tool has been received from Euroqol.org (Appendix E).

3.9. Rigor of research

The sample representation was ensured by using acceptable sample size calculated using Cochran formula with a confidence interval of 95% and allowing correlation of 10% error for small samples. The rigor of the study was ensured by the researcher in using standardised data collecting tools, and both the OPHI II and EQ-5D-3L have proven reliability and validity for South African samples. For this research study, a research protocol which precisely outlined how this research would be carried out was compiled. As such, it was followed and complied with. Moreover, the research tools provided and defined standardised procedures to be followed when administering these tests. As such, the standard procedures were used across all the participants to avoid any biases and inconsistencies.

3.10 Data management

All the data collected were stored on the University of the Witwatersrand's REDCap system (Patridge & Bardyn, 2018). All the completed demographic questionnaires, OPHI II completed scales, EQ- 5D-3L completed survey forms were scanned and saved on the REDCap System. The demographic information, which was anonymised by not writing the participant's identifying details but rather assigning them a number, OPHI II completed scales, and the EQ-5D-3L completed questionnaires were captured onto an excel spreadsheet for statistical analysis and were also saved in an access- controlled REDCap folder linked to the researcher's student account. These REDCap system folders can only be accessed by the researcher, and the supervisor.

Only the participant number appeared on the excel spreadsheet in column A of all the spreadsheets. The information gathered was solely used to meet the purposes of this study. All data collected during the study will be securely retained for two (2) years if a scientific publication arises from the study and six (6) years if there is no publication. Thereafter, through following the Wits HREC processes, the research data will be destroyed by shredding the physical documents and securely deleting electronic files.

The informed consent, consent for the audiotaping, and consent to obtain medical records were kept separately from the data collection sheets as the consent forms had the participants names on them. They are kept in a locked safe in the private home of the researcher and in a separate folder in REDCap system

As part of data management and data analysis, data gathered from the tools were also exported into the STATISTICA 13.2 and were protected by a password known by the researcher only.

3.11 Ethical considerations

This study was approved by the Human Research Ethics Committee (HREC) at the University of the Witwatersrand (M231107) (Appendix L). Further permission to conduct the study was obtained from Gauteng Department of Health and particularly Tshwane Rehabilitation Hospital since the study participants were the discharged patients from the institution (Appendix M). As required by the National Department of Health, the study was registered on the national research database (GP202308 002).

The research was designed to be responsive to the needs of persons with disabilities living in resource limited contexts following a period of in-patient rehabilitation. This was in line with guideline 2 of the Council for International Organizations of Medical Sciences International

Ethical Guidelines for Health-related Research Involving Humans, pertaining to research in low-resource settings (Council for International Organizations of Medical Sciences, 2016). The research outcome aimed to benefit those living in such resource limited settings in South Africa. Tshwane rehabilitation hospital is a public in- patient rehabilitation hospital that caters mostly for people from low- socio- economic backgrounds as mentioned in the previous chapter. The hospital has limited resources despite being the only in- patient rehabilitation in Gauteng and neighbouring provinces.

Interaction with the participants started through a call or WhatsApp text, then a call as some of the participants numbers were not available through service providers but were available on WhatsApp. In that first call, the researcher introduced himself and described the nature of the study to the participants, thereafter, the participants were invited to participate. In the subsequent interactions, the participants were sent information sheets, consent forms through WhatsApp and emails. A few participants did not have either WhatsApp nor email, in which case the researcher went through the information sheet and consent forms word for word with explanations and clarifications at the end, the researcher then obtained verbal consents. This was done to ensure that the participants gave informed consent for their participation. It was reiterated that participation was voluntary and that they had the right to withdraw from the study at any given time, this was done to ensure and respect their autonomy. All the data collecting documents, except for the consent forms did not have the participants personal and any identifying particulars, only their participant's number. This was done to ensure participants confidentiality and anonymity. Moreover, the REDCap system where the data excel spreadsheets were stored, was password protected and accessible only to the researcher and the research supervisor. Computer filled and scanned data collection tools were also safely stored in the researcher's private password protected computer and, on the researcher's, online google drive which is also password protected and only accessible to the researcher. For paper filled consent forms, the researcher kept them locked in a safe at the researcher's home.

The researcher observed all the ethical principles during the interview as he ensured that no harm was caused to the participants (non- maleficence); Participants were given freedom to choose either to participate or not participate in the research study (autonomy); Participants who had questions regarding their disabilities and who posed the questions to the researcher did good by answering the questions or by referring the participants to the relevant personnel where they could get assistance or further information (informed consent).

3.12 Distress Protocol

To ensure that no harm was caused to the participants, the researcher had a distress protocol at hand and prior arrangements with Tshwane Rehabilitation Hospital clinical psychologists were made to see any participants that showed signs of distress during the interview, should they consent to such referral (Appendix N). For participants that lived far away from TRH the researcher planned to refer them to the closest health facility for psychological intervention. This was the contingency plan as it was not foreseen that accessing local participants was going to be difficult.

3.13 Data analysis

The research was quantitative in nature. As such, to meet the objectives of this study, the descriptive statistical and inferential statistical analyses were done. STATISTICA 13.2 (TIBCO Statistica, 2018) was used to analyse the demographic information, OPHI II scales and the EQ-5D-3L using the frequencies and means.

The OPHI II scales: Occupational identity scale, Occupational competence scale, and the occupational environment scale and the EQ-5D-3L provided the ordinal data. Data was recorded in an Excel spreadsheet.

The frequencies of scores for occupational identity, occupational competence and occupational environment were used to determine the level of disruption of occupational identity, occupational competence and occupational environment based on the normative scores for the OPHI II.

An analysis of variance for each variable was used to determine the change in past and present occupational identity and occupational competence before and after the SCI as well as the present occupational identity and occupational competence functioning. Friedman ANOVA was the non-parametric test used to accommodate the small sample and ordinal data (Salman & Aleem, 2024).

The frequency of scores were determined for the occupational environment on the OPHI II. An analysis of variance -Friedman ANOVA was the non-parametric test used to identify the difference in the impact of environmental factors for PWP. The frequency of scores for each item of EQ-5D- 3L were used to determine scores in HRQoL. An analysis of variance - Friedman ANOVA was the non-parametric test used to identify the difference in the challenges in various components of HRQoL for PWP.

The correlation between occupational identity, occupational competence, occupational environment and HRQoL was determined using the non-parametric Spearman ‘correlation coefficient.

CHAPTER 4 RESULTS

4.1 Introduction

This chapter reports the results of the study as carried out per the methodology described in Chapter 3. The results are presented in two parts: firstly, the demography of the sample and then the results of OPHI II scales and the EQ-5D-3L are presented as per the three study objectives.

As noted in Chapter 3, seventy-two (72) discharged spinal cord injured patients met the inclusion criteria, of these 72 potential participants, the researcher was only able to contact 44 (61%) potential participants over the three months data collection period. Only 29 participants (40%) agreed to participate in this study. Thus, the sample was the 29 participants.

4.2 Demographic and medical information

4.2.1 Personal Demographics

Table 4.1 reports the age of the participants. The youngest participant was 20 years old with the oldest participant being 53 years old. The mean age was 33.4 and standard deviation (SD) of 8.64. The majority of the participants were between the ages of 34- 40. Most of the participants were males, 79.39% (n= 23) with only 20.7% females (n= 6).

Table 4.1 Age and gender of participants (n= 29).

		n	**Percentage**
Age in years	20-26	8	27.6
	27- 33	7	24.1
	34- 40	9	31.0
	41- 47	3	10.3
	48- 54	2	6.9
Gender	Female	6	20.7
	Male	23	79.3

4.2.2 Socioeconomic Demographics

Table 4.2 reports the employment status of the participants before and after sustaining SCIs. Most of the participants, 93.1 % (n= 27), were employed and studying prior to their injury. Only 6.9% (n= 2) of the participants were neither working nor studying prior to the injury. After the injury, the majority of the participants, 82.8% (n= 24) were no longer working nor studying. Only 17.2% (n= 5) returned to their jobs or studies, despite most of the participants (n= 28) having received vocational rehabilitation) during their in- patient rehabilitation.

Most participants, 72.41% (n= 21) were receiving a disability grant at the time of the data collection. A total of 27.59% (n= 8) did not receive the disability grant either because they were foreigners (n= 5) and, n= 3, were formally employed, and thus, not eligible to receive the disability grant.

Table 4.2 Employment status, vocational rehabilitation services and disability grants received (n= 29).

	Number Employed/ Studying	**Number Unemployed/ Not studying**	**Number who Received vocational rehabilitation.**	**Currently receiving Disability grant**
Before the injury	27 (93.1%)	2 (6.9%)		
After the injury	6 (20.7%)	23 (79.3%)	28 (96.6%)	21(72.41%)

4.2.3 Environmental facilitators for occupational engagement

Table 4.3. notes that none of the participants had accessible recreational centres in their communities to allow for active leisure participation. It is acknowledged that even before the SCI, some participants did not make use of the recreational centres. However, information on the accessibility of the recreational centres is needed to determine to what extent their environments facilitate occupational adaptation, thus occupational identity and occupational competence. For the mode of transport participants had access to following their SCI: 69.2% (n= 18) relied on public transport while only 30.8% (n= 11) had access to private transport. Private transport included a family/relative or friend's car that they relied on for transportation. None of the participants reported having an adapted car. The public transport the participants reported using mostly included hired transportation, such as Uber, Bolt rides, and seldom public minibus taxis. Although public minibus taxis are cheaper, participants reported struggling with access to this type of transportation. All reported transportations used were necessary as their roads and pavements where not accessible nor wheelchair user- friendly.

Table 4.3 Access to environmental facilitators for occupational engagement

		n	Percentage
Community resources for Leisure	Recreational centres unavailable	29	100.00
	Recreational centres available	0	0.0
Access to transport	Public transport	18	69.2
	Private transport	11	30.8

4.3 Medical information: Cause of the SCI and the Landrum levels of outcome

The causes of the SCI that the participants suffered are reported in Table 4.4. Most participants, 89.7% (n= 26) suffered a traumatic SCI. While only 10.3% (n= 3) suffered non-traumatic SCI. The traumatic SCIs resulted from stabbings (n= 6), gunshots (n= 13), motor vehicle accidents (n= 6) and falls (n= 1). While the NTSCIs include SCIs as a result of medical conditions such as TB spine (n= 3).

Table 4.4 Cause of injury and Landrum level of outcome at discharge (n= 29).

		n	Percentage
Cause of SCI	Traumatic SCI	26	89.7
	Non- traumatic SCI	3	10.3
Landrum level of outcome at discharge	Level IV	18	62.1
	Level V	11	37.9

As per the inclusion criteria most participants (62.1%; n= 18) were discharged on level IV of the Landrum outcome levels, while 37.9% (n= 11) were discharged on level V of Landrum outcome levels. This means that the participants were expected to be able to successfully reintegrate back to their communities and to their previous jobs or acquired new jobs. Thus, re-establishing their occupational identities and competencies.

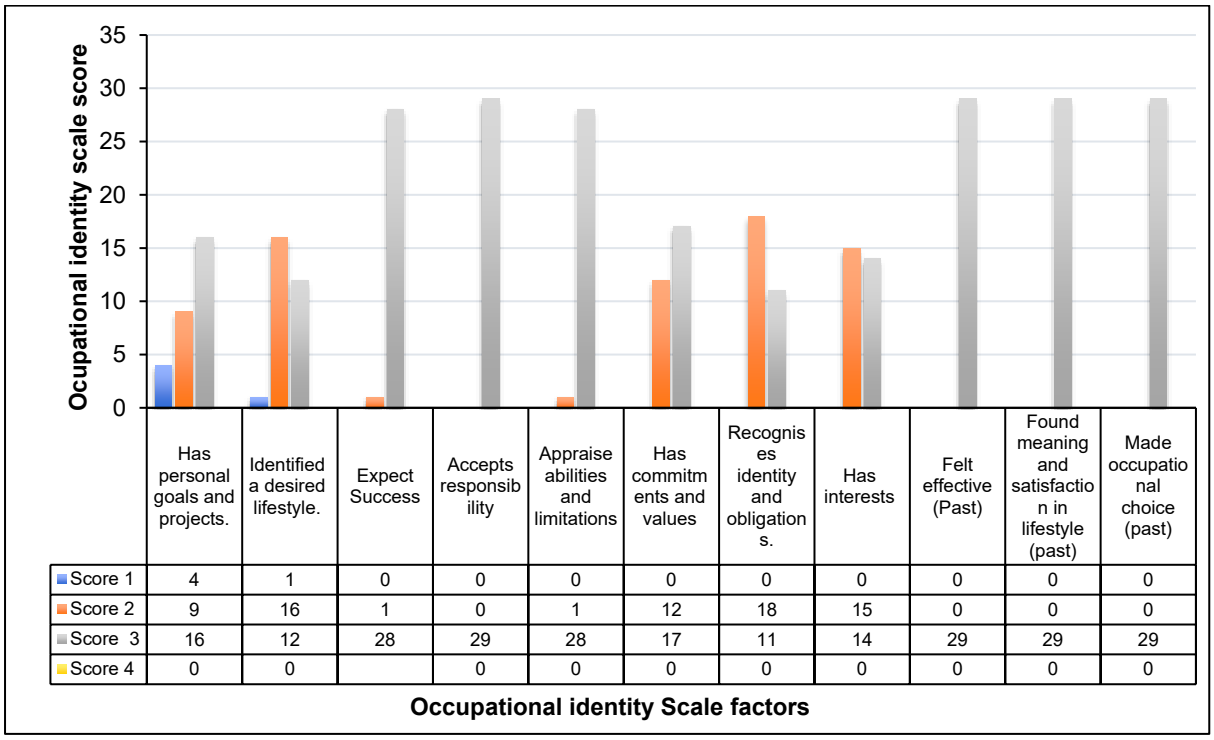
4.4 OPHI II scale Occupational identity and occupational competence of participants post SCI rehabilitation

The first objective of the study was to determine the occupational identity, occupational competence and occupational environment of participants post SCI rehabilitation.

4.4.1 Occupational identity scale

4.4.1.1 Occupational Identity Scale items

Figure 4.1 reports the occupational identity scale as per the OPHI II. This scale evaluated nine factors that determine the present occupational identity of a person which were rated on a 4-point scale where 4 indicated an exceptionally competent occupational functioning; 3 indicated a good, appropriate, satisfactory occupational functioning; 2 indicating some occupational functioning challenges; and 1 indicating extreme occupational functioning challenges (Kielhofner et al., 2004).



	Has personal goals and projects.	Identified a desired lifestyle.	Expect Success	Accepts responsibility	Appraise abilities and limitations	Has commitments and values	Recognises identity and obligations.	Has interests	Felt effective (Past)	Found meaning and satisfaction in lifestyle (past)	Made occupational choice (past)
Score 1	4	1	0	0	0	0	0	0	0	0	0
Score 2	9	16	1	0	1	12	18	15	0	0	0
Score 3	16	12	28	29	28	17	11	14	29	29	29
Score 4	0	0		0	0	0	0	0	0	0	0

Figure 4.1 Rating of participants Occupational identity on the OPHI II scale (n= 29).

- On item 1 *(Has personal goals and projects*) 55.17% (n= 16) of the participants scored 3, while 31. 03% (n= 9) of the participants scored 2. This implies that the majority of participants identifies themselves to have goals and projects which they are currently working on.
- *Identifying a desired lifestyle was item 2* and most of the participants experienced some occupational functioning challenges in this regard as 55.17% (n= 16) of the

participants scored 2, while 41. 38% (n= 12) scored 3 and the remaining 3.44% (n= 1) scored 1.

- On both Item *3 (Expects Success)* and Item 5 *(Appraises abilities and limitations),* 96.55% (n= 28) of the participants scored 3 while only 3.44% (n= 1) of the participants experienced challenges in this regard scored 1. This indicated that majority of the participants expected to be successful and were aware of their limitations.
- All Participants (n= 29) reported *accepting responsibility* (item 4) and not being self-blaming or critical.
- *Has commitments and values,* was item 6 on the scale, and 58.62% (n= 17) of the participants scored 3 while 41.38% (n= 12) scored 2.
- On Item 7 *(Recognises identity and obligations)*, most of the participants experience some occupational functional challenges as far as meeting obligations resulting from their roles that build up their identity. A large 62.07% (n= 18) of the participants scored 2 while 37.93% (n= 11) of the participants scored 3.
- *Has interests were* item 8 on the scale, and 51.72% (n= 15) of the participants scored 2 while 48.28% (n= 14) of the participants scored 3. This also indicates some challenges in this regard.
- Items 9, 10 and 11 provided information regarding the occupational identity of the participants before sustaining SCI. The scores indicated that participants believed they had lived normal and fulfilling lives as they felt active, found meaning and satisfaction in what they were doing as they had an array of occupations to choose from. Furthermore, participants agreed that although their lives included the hardships that average people experienced, they were not as severe as the current hardship they were experiencing because of living with SCIs. This was indicated by all participants (n= 29) having scored 3 on item 9 (*felt effective (past), as well as* item 10 (*Found meaning and satisfaction in lifestyle (past)* and item 11 (*Made occupational choice (past))*.

4.4.1.2 Occupational Identity Scale client measures total scores

Table 4.5 reports the range of the client measure scores for occupational identity for all the participants. The client measure scores were derived from the accumulated score values for all the items of this occupational identity scale. The client measure scores are scored from a range of 1- 100, with the score of 50 indicating a midpoint or an average client measure score. Thus, a higher occupational identity client measure score indicates an established occupational identity. The participants' client measure scores ranged between 39- 58. Only 44% (n= 13) of the participants, indicated by an asterisk, had a client measure that is above 50 while the remaining 66% (n= 16) of the participants had client measures that are below 50. This indicated that most of the participants have some occupational challenges with their occupational identity. Thus, a disrupted occupational identity.

Table 4.5 Occupational Identity Scale Client measure (n= 29).

Total Occupational identity scale	n	Percentage
39	1	3.45
43	2	6.90
45	5	17.24
47	1	3.45
49	7	24.14
52	7*	24.14
55	1*	3.45
58	5*	17.24

4.4.1.3 Variance in factors on the Occupational Identity Scale

Friedman ANOVA non- parametric test for ordinal data and small samples was used to determine the difference or variance in the scores for occupational identity in the past and those which refer to present functioning after the SCI, the variance in the occupational identity score for the total sample of 29 was significant with p = 0,00 and as can be seen from Table 4.6.

The score of the three items that measured the participants perception of past occupational identity are at the highest average rank of 7,29 and a mean of 3. This indicates an established occupational identity prior to the SCI. The factors which achieved similar scores presently in terms of occupational identity after the SCI is *accepts responsibility* with an average rank of 7,29 and a mean of 3 and expected *success* with an average rank of 7,13 and a mean of 2,96. All other factors have lower average rank scores and means lower than 3 indicating challenges in occupational identity. A desired lifestyle was the most affected in terms of occupational identity with a rank average of 4,05 and a mean of 2,37. Therefore, comparing the past items

of occupational identity with the items measuring the present occupational identity, the majority of the participants have suffered occupational identity disruption as a result of SCI.

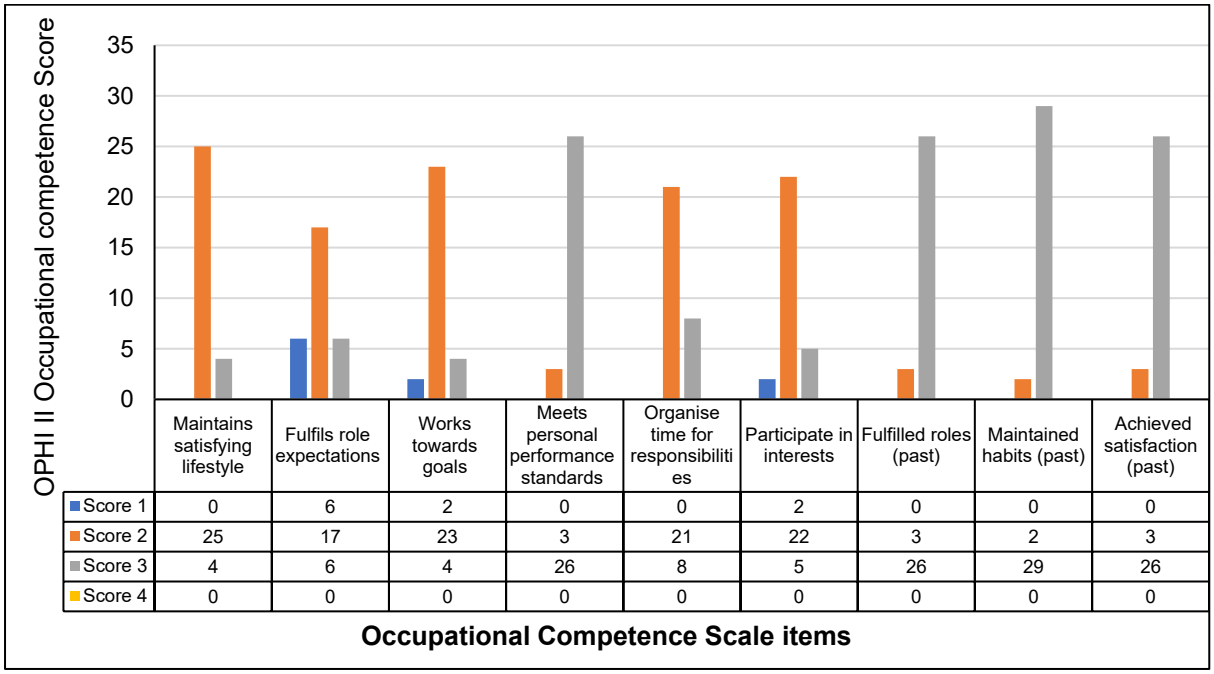
Table 4.6 Analysis of variance of occupational identity scores

Items on Occupational Identity scale	Average Rank	Mean	Std.Dev.
Has personal goals and projects	4.62	2.41	0.73
Identified a desired lifestyle.	4.05	2.38	0.56
Identity Expect Success.	7.14	2.97	0.19
Identity Accepts responsibility.	7.29	3.00	.
Appraise abilities and limitations.	7.10	2.97	0.19
Has commitments and values	5.10	2.59	0.50
Recognizes identity and obligations.	4.31	2.45	0.57
Has interests	4.50	2.48	0.51
Felt effective (past)	7.29	3.00	
Found meaning and satisfaction in lifestyle (past).	7.29	3.00	
Made occupational choice (past).	7.29	3.00	

4.4.2 Occupational Competence Scale

4.4.2.1 Occupational Competence Scale factors

Figure 4.2 reports the results of the OPHI II Occupational Competence scale. The occupational competence scale had 9 items and, similar to the occupational identity scale, the items were scored on a 4-point rating scale; where 4 indicated an exceptionally competent occupational functioning; 3 indicated a good, appropriate, satisfactory occupational functioning; 2 indicating some occupational functioning challenges; and 1 indicating extreme occupational functioning challenges (Kielhofner et al., 2004).



	Maintains satisfying lifestyle	Fulfils role expectations	Works towards goals	Meets personal performance standards	Organise time for responsibilities	Participate in interests	Fulfilled roles (past)	Maintained habits (past)	Achieved satisfaction (past)
Score 1	0	6	2	0	0	2	0	0	0
Score 2	25	17	23	3	21	22	3	2	3
Score 3	4	6	4	26	8	5	26	29	26
Score 4	0	0	0	0	0	0	0	0	0

Figure 4.2 Results of the OPHI II Occupational competence Scale (n= 29)

Majority of the participants described some challenges with occupational competence functions on this scale.

- This included some occupational challenges with *maintaining a satisfying lifestyle* (item 1), in which most of the participants, 86.21% (n= 25) reported having some occupational challenges and only 13.79% (n= 4) reported having no challenges with maintaining a satisfying occupational lifestyle.
- *Fulfilling role expectation* (item 2), on this item, the majority of the participants, 58.62% (n= 17) reported having some occupational challenges in fulfilling their role expectation while 41.38% (n= 6) reported to have no problems with fulfilling their role expectation.
- Most of the participants, 86.21% (n= 25), reported to have occupational problems in the regards of *Working towards the goals* (item 3), while only 13.79% (n= 4) reported to be working towards their goals.

- 89.65% (n= 26) participants reported no problems with *meeting personal performance standards* (item 4) mostly in performance of their bADLs. While 10.34% (n= 3) reported to seek some assistance when performing their bADLs.
- In item 5, *organising time for responsibilities,* the majority of participants, 72.41% (n= 21), reported some occupational challenges in this regard. While only 27.59% (n= 8) reported to be having no occupational problems with organising time for their responsibilities.
- Majority of the participants, 82.76% (n= 24) reported some occupational problems with *participating in the interests* (Item 6).
- For the past occupational performance, the majority, 89,66%, reported to have had *fulfilled lives* (item 7), *maintained habits* (item 8) and have had *achieved satisfactio*n (item 9) in their lives before sustaining SCI. Only 10.34% (n= 3) participants reported having had challenges with fulfilling their roles and achieving the overall satisfaction in their occupational lifestyle.

4.4.2.2 Occupational Competency Scale client measures total scores

Like the occupational identity scale above, the summing of the individual items on occupational competence scale calculated the client measure score that quantified how established a person's overall occupational competence was at the time of the data collection, which was reported in **Table 4.7.** Thus, the higher the client measure score, the better the occupational competence a person has. The participants' occupational competence client measure ranged between 41- 66, on the continuum from 1-100. As can be seen from **Table 4.7**, 62.07% (n= 18) of the participants had occupational competence client measure of below 50, which indicates some challenges of occupational functioning in this regard. The remaining 37.93% (n= 11) of the participants obtained a client measure score of between 52- 66. Notwithstanding this, the majority of the participants scored below the score of 50 indicating a disrupted occupational competence.

Table 4.7 Occupational Competence Scale total scores (n= 29)

Total scores on the Occupational competence scale	n	Percent
41	2	6,90
47	6	20,69
49	10	34,48
52	2*	6,90
55	4*	13,79
57	3*	10,34
59	1*	3,45
66	1*	3,45

4.4.2.3. Variance in items on the Occupational Competence Scale

Like the occupational identity scale, a Friedman ANOVA non- parametric test for ordinal data and small samples was also used to determine the difference or variance in the scores for occupational competence in the past and those which refer to present functioning after the SCI**.** The variance in the occupational competence score for the total sample of 29 was significant p =0,00 and as can be seen from **Table 4.8.** The score of the three dimensions that measure the participants perception of past occupational competence are higher with average ranks of 7,07 and a mean of 3. This indicates an established occupational identity for these items prior to the SCI.

Table 4.8 Variance of occupational competence scale items

Items on Occupational Competency Scale	Average Rank	Mean	Std. Dev.
Maintains satisfying lifes	3.50	2.17	0.38
Fulfils role expectations	3.10	2.00	0.65
Works towards goals	3.25	2.07	0.46
Meets personal performance standards	6.67	2.90	0.31
Organize time for responsibilities.	3.96	2.28	0.45
Participate in interests	3.29	2.10	0.90
Fulfilled roles (past).	7.06	3.00	
Maintained habits (past).	7.06	3.00	
Achieved satisfaction (past).	7.06	3.00	

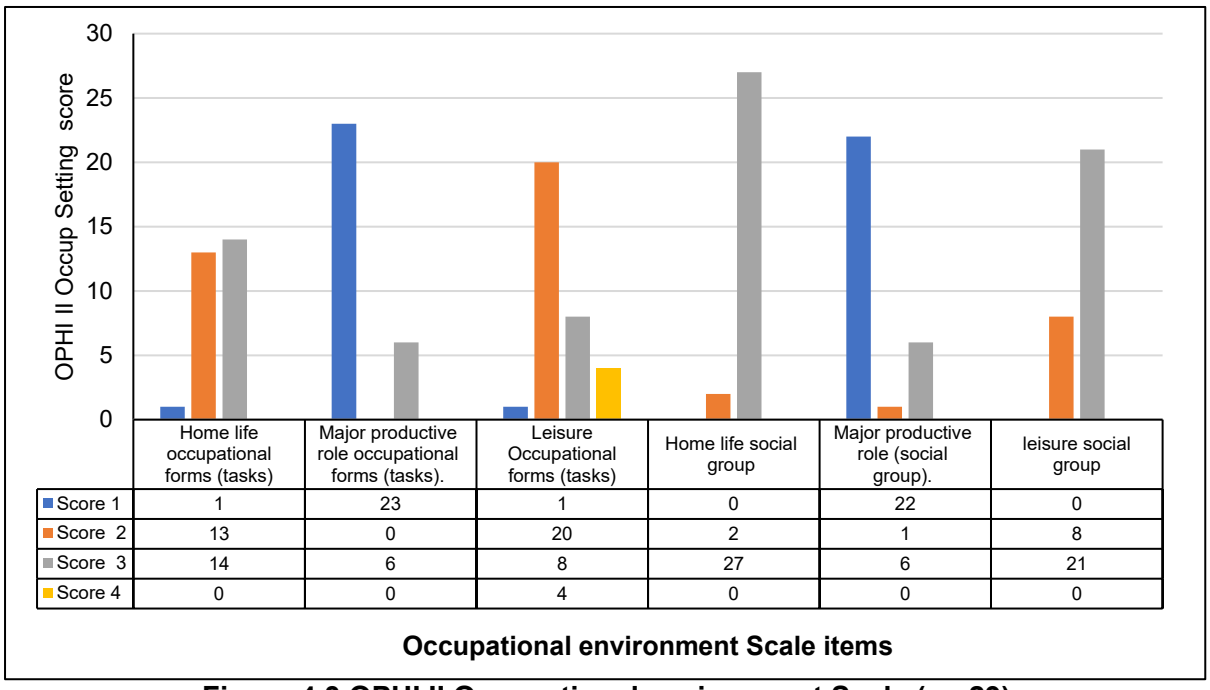
The items which achieved almost similar scores presently in terms of occupational competence is the *meeting personal performance standards* with average rank of 6.67 and mean of 2.90. All other items have lower average rank scores and means lower than 3 indicating challenges in present occupational competence. *Fulfils role expectations* is the most affected with a rank average of 3.10 and mean of 2.00. Thus, comparing the past items of

occupational competence with the items measuring the present occupational competence, the majority of the participants had disrupted occupational competence post SCI.

4.4.3 Occupational environment Scale

4.4.3.1 Occupational environment Scale items

Figure 4.3 reports the results of the OPHI II occupational environment (settings) scale of the OPHI II. Similar to the above scales, the occupational environment scale also uses a 4- point rating scale.



	Home life occupational forms (tasks)	Major productive role occupational forms (tasks).	Leisure Occupational forms (tasks)	Home life social group	Major productive role (social group).	leisure social group
Score 1	1	23	1	0	22	0
Score 2	13	0	20	2	1	8
Score 3	14	6	8	27	6	21
Score 4	0	0	4	0	0	0

Figure 4.3 OPHI II Occupational environment Scale (n= 29)

- *Home life occupational forms* is item 1 of the scale. The item relates to the ability to perform the IADL. Majority of the participants, 51.73% (n= 15) reported having no issue in the performance of these occupational forms. While 44.83% (n= 13) reported to have some occupational functioning challenges in this regard and they require assistance from time to time. While one participant (n= 1) reported severe occupational functioning challenges in this regard.
- On the item, *major productive role occupational forms,* item relates to occupational performance in work/studies, most of the participants, 79.31% (n= 23) reported to have severe occupational dysfunction, it is for that reason that they could not return to their previous employment. For the participants, 20.69% (n= 6), who continued with their employment reported to have no occupational functioning challenges in this regard. The results obtained above for item 2 corroborated by the results obtained from the

demographic questionnaire which are reported in Table 4.3. Further corroboration of item 2 was provided by results from the demographic questionnaire as to whether the participants were receiving a disability grant or not. With the participants that are not working nor were self- employed (selling goods from home), but most of them survived financially on the disability grants.

- *Leisure occupational form tasks*, item 3, refers to different leisure activities that the participants found meaningful and restorative. Most participants, 68.97% (n= 20) had some challenges with their leisure occupational tasks. Participants reported to not be able to participate in the previous interests because of their limited physical abilities. They also reported that their environments did not support the adaptation of the previous leisure participation, nor the stimulation or exploration to new interests.
- For item 4, *home life social group,* which explored the social participation and support at home. Most participants, 93.10% n= 27), reported having good social participation and support at home. Only 6.90% (n= 2) reported having some challenges as they did not have good familial support as well as having affected social participation at home.
- For item 5, *major productive role (social group),* majority of participants, 75.86% (n= 22) reported severe occupational performance challenges in this regard. Lack of support at work resulted in the participants not returning to their previous employment This was regardless of the recommendations for reasonable accommodations recommended during the vocational rehabilitation intervention.
- *Leisure social group,* item 6, determined social support from others besides the family, which referred mostly to friends and neighbours. Majority of the participants, 72.41% n= 21), reported having good social support from others. They reported being on good terms with most of their friends from whom they received support. This group of participants did acknowledge having lost some friends after the injury but true friends, they reported, have stayed around. Only 27.59% (n= 8) of participants reported some occupational challenges in this regard. This group of participants reported having lost a considerable number of friends after they sustained SCI. Some participants reported to still be having friends but felt that they were no longer good enough for their friends, and for this reason they decided to distance themselves from them.
- Item 7, *home life, physical space, objects, and resources,* relates to the availability of resources, physical space in the home environment to enable occupational performance. Majority of the participants, 79.31% (n= 23) reported having no occupational performance problems as their home environment was largely accessible and they had resources to enable occupational performance. While 13.79% (n= 4) of the participants reported some occupational performance problems in their homes and one participant (n=1) severe occupational functioning in this regard.

- Item 8, *major productive role physical space, objects, and resources,* related to an accessible education/work environment and objects and resources. Majority of the participants, 79.31% (n= 23) reported having severe occupational performance challenges in this regard. This was due to an inaccessible physical environment and lack of resources that resulted with them not returning to their previous work/studies. On the other hand, 6.90% (n= 2) of participants reported having no issue with their work physical space and the resources. It was for this reason that they had returned to their jobs.
- *Leisure physical space, objects and resources*, item 9, determined whether the participants have resources, objects in the environment to support their leisure participation. A total of 65.52% (n= 19) of the participants reported that their environment did not support their previous leisure participation. They reported also struggling to engage in new leisure interests because of the limited resources they have in their unstimulating community contexts. One participant reported that he travelled more than 10 km to access a recreational centre to play wheelchair rugby. Only 34.48% (n= 10) of participants reported having a supportive physical environment for their leisure pursuits. For these participants, their leisure participation was mostly passive leisure participation such as watching TV, playing TV games and or hanging out with friends. These participants reported having resorted to passive leisure participation because their environments did not enable for the active leisure participation previously engaged in. The results from item 9 above are corroborated by results obtained from the demographic questions which noted that all of the participants reported not to have accessible recreational centres in communities to allow for active leisure participation, Table 4.5. The results on the items 8 and 9 are corroborated with information from the demographic questionnaire pertaining to the transportation see Table 4.6. Lack of transportation may affect travelling to access recreation centres or to work.

4.4.3.2 Occupational environment Scale client measures total scores

Similarly, to the occupational identity and competence scales above, occupational environment scales the participants individual factor scores were summed into the client measure/ interval score that quantifies how supportive, accessible and resourceful the participants overall occupational setting was. Thus, the higher the client measure score, the better the participant's occupational environment was. As can be seen from **Table 4.9**. The participants' occupational environment client measure ranged between 0 and 77 which was higher than the client measure score in the occupational identity scale. A total of 82.76% (n= 24) of the participants had occupational environment client measure scores of below 50, which

indicates challenges of occupational functioning in this regard. One participant (n= 1) had a client measure score of zero (0). The reason for this low score was because the participant lived in a poorly positioned and constructed shack which got flooded on the rainy days. The inaccessible recreational centres also contributed to the low scores in this section. Furthermore, an inaccessible working environment that led to the high unemployment among the participants also led to these low scores. The remaining 17.24% (n= 5) of the participants obtained a client measure score of above 50. These are mostly the participants that were employed.

Table 4.9 Occupational Setting Scale Client measure scores

Total scores on the Occupational Setting Scale	N= 29	Percent %
0	1	3,44
28	1	3,44
30	2	6,89
32	2	6,89
35	9	31,03
37	4	13,79
41	4	13,79
49	1	3,44
52	3*	10,34
59	1*	3,44
77	1*	3,44

4.4.3.3 Variance in items on the Occupational Setting Scale

As indicated by **Table 4.10,** Items 2, 5 and 8 dealt particularly with the work occupational environment. This is where the majority of the participants, 79.3% (n= 23), experienced the most challenges. Most of the participants could not go back to their previous jobs because the work environment did not support nor accommodate their limited function and/or were not wheelchair accessible. Moreover, the participants' contributions were no longer acknowledged nor were their skills appreciated. Another reported challenge in this regard was accessing public transportation to travel to work. The home life occupational environment items were least affected, this is so because the majority of the participants reported having accessible homes, good emotional support structures, and that they are generally comfortable at their homes. Thus, the participants' overall occupational environment scale was disadvantaged by the work occupational setting.

Table 4.10 Variance of occupational setting items

	Average ranks	Mean	Std.Dev.
Home life occupational forms (tasks).	5.86	2.48	0.57
Major productive role occupational forms (tasks)	2.87	1.41	0.82
Leisure occupational forms (tasks).	4.98	2.24	0.51
Home life social group	7.29	2.93	0.26
Major productive role (social group).	2.98	1.45	0.83
Leisure social group	6.69	2.72	0.45
Home life, physical space, objects, and resources	6.55	2.72	0.59
Major productive role physical space, objects, and resources	2.87	1.41	0.82
Leisure physical space, objects, and resources	4.88	2.21	0.56

4.4.4 Client measure total scores for Occupational identity, Occupational competence and Occupational environment post SCI in- patient rehabilitation

As indicated above, client measure scores are accumulative values of the scores obtained from the individual factors in occupational identity, occupational competence and occupational setting scales. Figure 4.4 depicts that most of the participants had client measure scores of below 50 on a continuum of 1- 100 for occupational identity, occupational competence and occupational environment. This indicates that the majority of the participants have disrupted occupational identities, and occupational competences post SCI in- patient rehabilitation. Moreover, their occupational environments were also affected, and they did not support the re- establishment of their occupational identity and occupational competence. On the other hand, for items in occupational identity and occupational competence scales that determined both occupational identity and occupational competence in retrospect, the results indicated that participants had established occupational identity and occupational competence prior to the SCI.

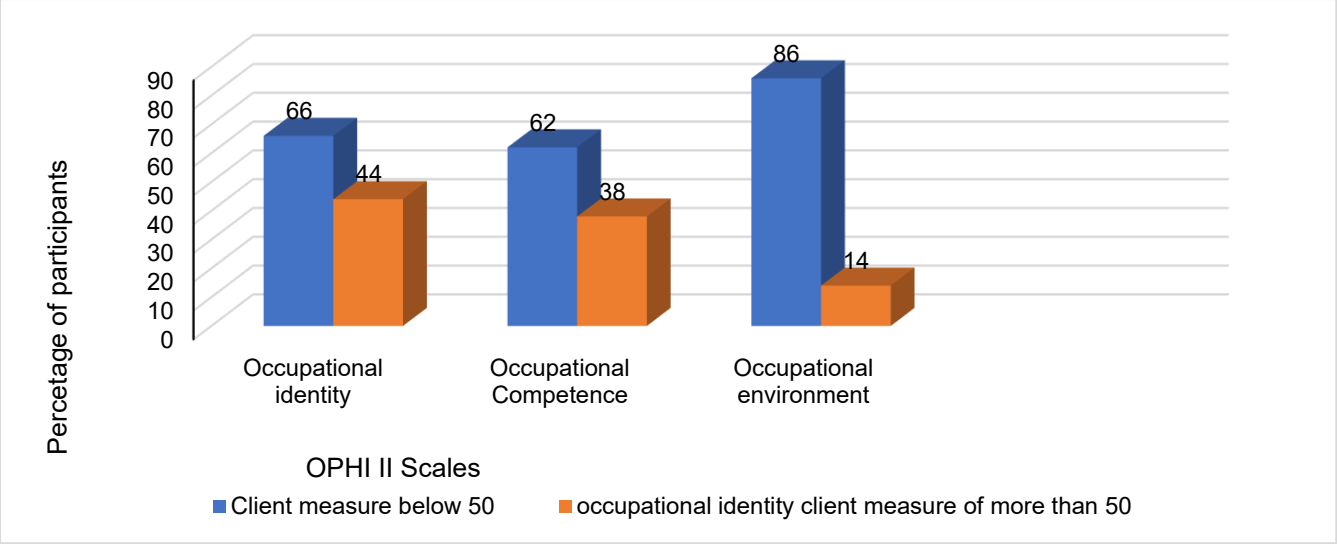


Figure 4.4 Occupational identity, occupational competence and occupational environment post in- patient rehabilitation

4.5 Health Related Quality of Life

The second objective was to determine the HRQoL of PWP post SCI. As noted in chapter 3, the EQ-D5-3L tool was used to measures HRQoL and it comprises of five- dimensional descriptive system that is divided into three levels of perceived problems: level 1- indicating no problems; level 2- indicating some/moderate problems and level 3- indicating severe/extreme problems.

Table 4.11 indicated the number of responses by the participants per HRQoL dimensions. Majority of the participants, 69% (n= 20), reported having some problems with mobility. With self- care activities, 86.2% (n= 20) of the participants reported to be independent with their self- care activities. Another problematic domain was the *usual activities* dimension, most of the participants, 82.8% (n= 24) reported having some problems. Majority of the participants, 82.8% (n= 24), struggled with pain/discomfort. Only 48.3% (n= 14) reported to have no anxiety/depression while 41.4% (n= 12) reported to have moderate anxiety/depression and 10.3% (n= 3) reported severe anxiety/depression.

Table 4.11 Health Related Quality of Life factors

Quality of life factors	Extent of problems	Responses %(n)
Mobility	No problems	27.59% (n= 8)
	Some problems	68.97% (n= 20)
	A lot of problems	3.45% (n=1)
Self- Care activities	No problems	86.21% (n=25)
	Some problems	13.79% (n=4)
	A lot of problems	0
Usual activities	No problems	17.24% (n=5)
	Some problems	82.76% (n=24)
	A lot of problems	0
Pain/Discomfort	No problems	6.90% (n= 2)
	Some problems	82.76% (n= 24)
	A lot of problems	10.34% (n= 3)
Anxiety/Depression	No problems	48.28% (n= 14)
	Some problems	41.38% (n= 12)
	A lot of problems	10.34% (n= 3)

4.5.1 Analysis of variance of Health-Related Quality of Life scores

The analysis of variance for the HRQoL variable reported an ANOVA that was significant p = 0,000 confirming the dimensions measure a discrete aspect of HRQoL, Table 4.12. While there were no before and after SCI scores specified for HRQoL in the EQ-5D-3L, the lowest r=1,77 for self-care influences better HRQoL scores, while pain and discomfort with r=3,81 influences HRQoL more than the other dimensions. These results support the frequency noted in Figure 4.1 and 4.2. where 27 participants indicated they had some to challenges with pain that affects the occupational competence and their occupational identity. The same is true for the anxiety and depression influencing HRQoL, where 15 (51.72%) participants indicated that depression and anxiety influenced their HRQoL.

Table 4.12 Analysis of variance of Health-Related Quality of Life

	Average Rank	Mean	Std.Dev.
HRQoL Mobility	3.20	1.758621	0.510964
HRQoL Self- Care	1.77	1.137931	0.350931
HRQoL Usual activities	3.37	1.827586	0.384426
HRQoL Pain/Discomfort	3.81	2.034483	0.421117
HRQoL Anxiety/ Depression.	2.82	1.620690	0.676852

4.6 Association between occupational identity, competence, environment and HRQoL among participants

The third objective of this study was to determine the association between occupational identity, occupational competence, occupational environment and HRQoL.

4.6.1 Association between occupational identity, occupational competence, and occupational environment

As can be seen in **Table 4.13,** the results of Spearman Rank Order correlation showed a positive strong correlation between occupational identity and occupational competence measurement scales at 0,64 where scores between 0,6-0.8 indicates a strong correlation. There was a positive weak correlation (0.4-0.5) between identity and the environment client measurement scales (0,42) and positive significant correlation between the environment and competence scales (0,531215). All correlations were found to be statically significant at $p<0,05$.

Table 4.13 Correlation between the variables of the OPHI II (n= 29)

	Occupational Identity C Measure	Occupational Competence Client Measure
Identity Client Measure/ Interval score		0,64*
Competence Client Measure/ Interval score	0,64*	
Occupational setting Environment Client Measure	0,42*	0,53*

*Significant at p <0,05

4.6.2 Association of Occupational Identity, Competence and Settings and factors related to Health-Related Quality of Life

Table 4.14 reported the correlation values between the client measure scores of the occupational identity scale, occupational competence and occupational environmental scale of the OPHI II, and the five dimensions of EQ-5D-3L. The five- dimensions of EQ-5D-3L are also scored on a 3-point Linkert scale with the highest value, score 3, indicating severe problems. While the higher values on the occupational identity scale, occupational competence and environmental scale indicate better functioning. This would suggest that all correlations should be negative, which was not the case as only nine of the correlations were negative which further suggests that these two measures are not identifying the same factors. The Spearman's Rank order correlation indicates that little to no correlation exists between the variables of these two measures with all correlations between 0 and 0.3. A significant result was only found between occupational competence and quality of self-care.

Table 4.14 Correlation of Occupational Identity, Competence and environment and factors related to HRQoL in PWP post SCI rehabilitation

	HRQoL Mobility	HRQoL Self- Care	HRQoL Usual activitie	HRQoL Pain/ Discomfort	HRQoL Anxiety/ Depression.
Occupational Identity Client Measure	-0.34	-0.37	-0.16	0.12	-0.29
Occupational Competence Client Measure	0.01	-0.23	-0.08	-0.03	-0.14
Occupational Setting Client Measure	0.00	-0.13	0.36	0.23	0.13

*Significant at p <0,05

4.7 Summary of results

In determining the association between occupational identity, occupational competence and occupational environment, a strong association was found between occupational identity and occupational competence, p<0.64, with slightly higher positive association between occupational competence and occupational environment, p<0.53. There was a weaker association between occupational identity and occupational environment, p<0.42. Further associations were determined between occupational identity, occupational competence, occupational environment and the HRQoL individual dimensions, and no significant association was found between the variables as the two measures/tools were not identifying the same things.

CHAPTER 5 DISCUSSION

5.1 Introduction

This chapter discusses the results as reported in the previous chapter and the extent to which they contribute to the professional knowledge to answer the two research questions

The aim of this study was to determine the extent to which PWP experience changes in occupational identity, occupational competence and impact of their occupational environment on their functionality post SCI and if there is correlation between occupational identity, occupational competence, occupational environment and HRQoL.

A discussion on the demographic particulars of the study participants firstly will be undertaken to determine the characteristics of participants relative to other national and internationally published studies. This would then demonstrate how applicable the results are to the population of PWP in the early stages of community reintegration post in-patient rehabilitation from a public sector rehabilitation hospital in the South African context. Secondly, the results from the OPHI II and EQ-5D-3L will be discussed. The results will be discussed in relation to the three study objectives and compared to the published local and international literatures on the related topic.

5.2 Demographical and medical particulars

As noted in the previous chapters, the required sample size was 35 participants, and only 29 participants could be accessed and agreed to participate. Notwithstanding this, the findings garnered by this study highlights significant findings as far as the re- establishment of occupational identity, occupational competence and the impact of the occupational environment is in the recovery journey of PWP. Moreover, the findings of this study should be generalised with caution as only participants rehabilitated from TRH formed the inclusion criteria of this study.

The demographic and medical particulars of the participants were obtained using the demographic questionnaire (Appendix J). Globally, there is a large body of literature on the demographic profile of SCI, while there is quite limited knowledge of the PWP profile in South Africa as there is no national spinal cord injury register (Conrad et al., 2017).

5.2.1 Age and gender of the participants

The sample in this study consisted of mainly males between the ages of 34- 40 with the overall mean age of 33.4. This concurs with the mean age of samples reported in South African studies on this population. Joseph et al. (2015) reported a similar mean age of 33.5 years and mean age 34 years was reported by Sothmann et al. (2015). The mean age in this current study is slightly lower than that reported by Alves et al. (2023) and Pefile et al. (2019) who reported a slightly higher mean age of 36.9 years among PWSCI in their respective studies. This figure is also somewhat lower again than in a study by Van Veen (2018) who reported a slightly higher mean age of mean age of 38.2 years in her study in a private rehabilitation setting. Although there are slight differences in the reported mean age from these previous studies to the present study, the mean age of the of PWSCI remains to be around the age people are expected to have established occupational identities and competencies as far as having jobs or careers, and set roles is considered.

Internationally, a recent systematic review by Lu et al. (2024) reported that SCI was most prevalent between 20 and 40 years although a trend towards a later onset has been recorded and associated with aging while an earlier study. McCaughey et al. (2016) reported SCI most commonly occurring among people of 18- 49 years old. These international reports concur with the current study as do two local studies by Alves et al (2023) and Pilusa (2019) also reported the common age group of 31–45.

In this study, a high percentage of participants were males, with only 20.7% females. This trend is also consistent with local and internationally published studies. Locally, Alves et al (2023), Van der Veen (2018) reported that males were more commonly diagnosed with SCI than females. This has also been noted in other sub- Saharan Africa countries (Jesuyajolu et al., 2023). International literature also reported higher prevalence of SCI among males (Ding et al., 2022; McCaughey et al., 2016; Lu et al., 2024). It is hardly surprising, given that males are more likely than females to engage in violent behaviour. This is consistent with the findings of this study, which found that violence was one of the most common causes of SCI.

5.2.2 Employment, transportation and recreational resources

In this study, of 27 participants that were employed prior to the SCI, only 6 of them (20.7%) returned to work (RTW). Generally, a low rate of 34% of RTW among PWSCI worldwide has been reported (Post et al., 2020). There are no South African statistics to indicate RTW among PWSCI. Looking at factors such as a higher unemployment rate even among people without SCI, a higher unemployment rate among PWSCI is expected Bezuidenhout et al., 2022). To mitigate this, the South African Employment Equity Act 55 of 1989 provides that at least 2%

of the company's human resource composition should be PWDs. The 22nd Commission Report for Employment Equity Annual Report 2021-2022 demonstrated that this Act's provision seems not to be upheld by employers as the employment rate among PWDs in South Africa is less than 1% in many sectors (Department of Labour, 2022).

Surprisingly, a much higher RTW rate of 82,9% of PWSCI that received their in- patient care in private rehabilitation hospitals/centres have been reported (Van Veen, 2018). This was ascribed to participants in that study having had higher tertiary education levels and most of them had formal white-collar employment prior to their SCI unlike many PWSCI that are admitted in public hospitals. Borg et al. (2020) also reported that participants with masters/PhDs were more likely to have paid employment after sustaining SCI. Typically, in South Africa a higher tertiary level education has been associated with a higher socioeconomic status and better opportunities of employment (Van der Veen, 2018). Nonetheless, the RTW and maintenance of employment among PWSCI in South Africa remains concerningly low (Swart et al., 2023; Aiachini et al., 2016). The rate of the RTW among PWSCI is reported to be better in the developed countries than in the developing countries, for instance, Morocco has the lowest PWSCI employment rates of 10.3% while Switzerland has the highest PWSCI employment of 61.4% (Post et al., 2020). Thus, Oliveira et al (2021) reported that low return to work among PWSCI is a global problem which is influenced by many factors.

Challenges with RTW or engagement in work occupation among people with disabilities is complex and according to Swart et al. stems from the microsystem (individual- level), mesosystem (immediate environment) and from the macrosystem (society) (Swart et al., 2023). A good transportation system enables PWSCIs to access workplaces, as well as other services, goods and opportunities and to be part of a community (Peña Cepeda et al., 2018; Vecchio, 2017). Most of the South African taxi ranks and Metrorail stations do not comply with the universal access principles, thus creating a barrier for PWDs to use transportation (Duri & Luke, 2022). Majority of participants in the current study, 69.2%, relied on public transport. Some participants verbalised the bad attitude of the taxi drivers towards disabled people. It is well documented in the local literature that minibus taxi drivers have negative attitudes towards PWDs (Abraham et al., 2023; Ipingbemi, 2015; Kett et al., 2020). This attitude may be resulting from how time consuming they perceive loading a PWP into the taxi to be, especially at peak times, and how much space their wheelchair may occupy, influencing the payment per taxi trip. Thus, the negative attitudes of drivers towards passengers with disability is a common problem across many African countries (Duri & Luke, 2022). It was also, reportedly, expensive for the participants to use hired cars every day to go to work, it is for this reason, transportation, that some of the participants could not RTW.

As most of the participants in this study were reported to be unemployed, most of the participants were receiving a disability grant. A disability grant is a social grant given to South African citizens aged between the age of 18 and 59 who are medically unfit for work because of mental or physical disability (Department of Social Development, 2024). A maximum monthly amount of R2180 was given to the qualifying PWDs and the specific amount was based on a means test (value of assets and income) (Republic of South African government, 2024). In private health care settings, it has been reported that only 7.69% of PWSCI received the disability grant (Van der Veen, 2018). This may be because many of the participants in that study returned to work, thus, were ineligible to receive such grant.

This current study's results were consistent with international literature. Oliveira et al. (2021) explored SCI and work in Brazil and found out that 83% of them did not RTW and they were receiving disability, retirement or benefits which was their main income. There is a discourse in South Africa on whether social grants, including disability grants, influences low employment rates among its recipients in that it discourages job search (Miyajima, 2024). The high unemployment rate, even among able- bodied people, is an indicator of the prevalence of this problem nationally. As such, these circumstances would cause PWDs to apply for disability grants since, to an extent, it will assist in meeting their daily basic needs. Therefore, many factors contribute to high unemployment rates and are aggravated by other factors such as poor accessibility, poor attitudes towards PWPs.

Participants in this study reported the lack of accessible community recreational centres including community sports grounds, parks and gyms. For PWSCI, lack of accessible resource centres meant some limitation to participation in the previous outside of the home leisure interests and also limits the opportunity to explore alternate leisure interests. The participants' previous leisure participation was explored under item 2 (*Identifying a desired occupational lifestyle)* of the occupational identity scale, where majority of the participants reported having issues in establishing their desired lifestyle. One of the identified issues was not being able to participate in sports such as playing soccer, going to the stadium to watch football, while other participants reported not being able to go fishing as the environment around the lake was not accessible. Other participants reported more passive leisure pursuits that did not require attending recreational centres. The availability of accessible recreational centres regardless of the previous leisure interests may have facilitated occupational exploration and adaptation, thus re-establishment of the occupational identity and competence as far as restorative occupations are concerned. The lack of accessible community resource centres has also been reported in the developed countries. Barclay et al. (2015) noted a similar problem in Australia. They reported that public facilities and shopping centres continue to be built in Australia

without full consideration of the needs of people with limited mobility or use of wheelchairs (Barclay et al., 2015).

Therefore, from the results, the reciprocal effect between lack of transportation, unemployment and inaccessible recreational resources in the community was seen as a challenge to occupational engagement and potentially occupational identity and competence and it is a widespread problem experienced by PWP both locally and internationally.

5.2.3 Medical information of the participants

Majority of participants in this current study suffered TSCI, while only 10.3% suffered NTSCI. Most of the TSCIs resulted from assault: stabbing and gunshots followed by the Motor Vehicle Accident (MVA). These results are consistent with the local literature. Alves et al (2023) reported that in their study assault was the most common cause of the SCI followed by transportation injuries. This again concurs with the work by Phillips et al (2018) who also reported assault as the common cause of TSCI in patients seen in public hospitals. According to the national crime statistics 2023 crime rates that involve stabbings and gunshots are rife in Gauteng (Crime registrar, 2023), thus, the prevalence of assaults in these studies in Gauteng may be ascribed to this (Alves et al., 2023).

In private rehabilitation settings, MVAs were reported to be the most common cause of TSCI (Phillips et al., 2018; Van der Veen, 2018). Alves et al. (2023) suggested that this may be due to the Road Accident Fund of the Department of Transport paying for health care and rehabilitation of PSCI due to MVAs in the private health sector. Similarly, this may also be due to the Compensation Fund of the Department of Employment and Labour paying for PWSCI as a result of MVAs receiving medical care and rehabilitation at the private rehabilitation hospital instead of the public sector. As such, those with TSCI caused by assaults and who do not have private health insurance have no option but to go to the public rehabilitation hospitals. The international literature also reported the common aetiology of TSCI to be MVA (Jesuyajolu et al., 2023). In the current study, only one participant had TSCI due fall. Falls are reported to be the second prevalent cause of TSCI internationally (Golestani et al., 2022). Interestingly, TSCI due to assault does not even come second in the international studies, this clearly indicates the issue of safety and crime the country is facing.

The assumption used in this study was that following in-patient outcome-based rehabilitation the participants were expected to be able to reintegrate into their communities and those that had jobs would be able to return to their jobs with or without reasonable accommodations depending on the nature of their job duties. This also tallied with their discharge Landrum outcome levels of IV and V. The majority of the participants 62.1% were discharged on level

IV of the Landrum outcome levels, while 37.9% were discharged on level V of Landrum outcome levels. These Landrum outcome levels on discharge were consistent with the results from the other in- patient rehabilitation hospital in Western Cape, South Africa (Joseph, 2011). Joseph (2011) found that the majority of the PWSCI (60.53%) achieved Landrum outcome level IV and V upon their discharge. As seen from the community reintegration literature discussed above, there exists some discrepancy between the assumptions made on Landrum level achieved by the patients upon their discharge and what is realistically happening in the community which strongly suggests that participants are not reintegrated in their community as expected. Van der Veen (2018), in her master's research study, examined the factors influencing community reintegration of persons with SCI who received private in- patient rehabilitation in Gauteng. She found similar discrepancies between the Landrum level of outcome achieved by the participants and their community integration (Van der Veen, 2018). She postulated that the discrepancies may be because participants were able to fulfil most of the requirements of the level in a supportive and adaptive hospital environment and did not necessarily having the same resources and support to perform their meaningful occupations where they resided in their home and in their community (Van der Veen, 2018). This postulation is consistent with circumstances of the participants of the current study as TRH, a specialised rehabilitation hospital, which was specifically adapted to the needs of SCI patients, is accessible, and participants were able to engage in a variety of occupations they found meaningful in the hospital setting. It was from that stance that they were scored on level IV and level V upon their discharge. Unfortunately, they were met with different and real-life circumstances upon arriving in their communities, which then became an impediment to their community reintegration.

Thus, the participants' demographic and medical information as discussed above illustrated mostly similar circumstances as of PWSCI reported in the local and international literature. From this section, it was clear that some of the contextual realities of the real home and community environment, more especially in the urban, rural and informal settlements, must be addressed during the in-patient rehabilitation. This would ensure a more successful community reintegration that would facilitate the re-establishment of occupational identity and occupational competence. More research studies into community-based rehabilitation and community reintegration that target these contextual realities would be highly beneficial as it would assist scholars and policymakers in understanding the realities of many average South Africans. It is further acknowledged that some contextual realities, such as transportation issues, unemployment issues, are beyond what can be addressed during in- patient rehabilitation and have to be addressed on political and national level.

5.3 Occupational identity, occupational competence and occupational environment

The first objective of this study was to determine occupational identity, occupational competence and occupational environment of PWP four months post discharge from a rehabilitation centre. The OPHI II tool was used to collect the data thereto, firstly through the structure interview and information obtained therefrom was translated to the rating scales to provide client measure scores. The client measure scores denoted how established or disrupted participants experienced their occupational identity and occupational competence to be post SCI. The tool also provided information on the occupational environment which was important as it has been well established that one's occupational environment can either facilitate or hinder re-establishment or maintenance of occupational identity and occupational competence (Taylor, 2017; Firfirey & Hess-April, 2014).

The occupational identity results as to determine the participants' occupational identity post SCI rehabilitation will be discussed first followed by the occupational competence results and lastly, the participants' occupational environment will be discussed and how it affected the participants' occupational identity and occupational competence.

5.3.1 Occupational identity

Abrupt changes and loss of occupations that are meaningful and purposeful to one may lead to altered sense of self, poor body image and interrupted identity (Walder & Molineux, 2017), which translate to the disrupted occupational identity. From the results of this study, it is clear that the majority of the participants suffered occupational identity disruption. Seminal work from both occupational sciences and occupational therapy scholars indicated a strong relationship, mutual dependence, between identity and competence in meaningful occupations (Christiansen, 1999; Griffith et al., 2007; Laliberte-Rudman, 2002; Cotton, 2012).

5.3.1.1 Occupational identity items

As noted above, occupational identity scale is made up of 11 items that cumulatively provide a client measure score to indicate how established or disrupted one's occupational identity is. As it would be seen below, the last three items on the scale provided information on the preinjury occupational identity of the participants. Therefore, what follows is a discussion of the occupational identity scale items that indicate how participants' occupational identity is disruption.

Majority of the participants on item 1 *(Has personal goals and projects*), 55.17%, were rated 3 which indicated an appropriate and satisfactory occupational functioning. Participants

reported uncertainty about their futures and most of their life goals and plans were reported to be on hold. This concurs with Martin-Saez andJames (2021) findings that uncertainty about the future is at the core of the occupational identity disruption process (Martin-Saez & James, 2021). The common personal goal that most participants reported was to walk again. Moreover, these participants regarded daily exercises and attending physical therapy as their main project necessary to achieve their ability to walk. This was regardless of whether their SCI was complete or not. These findings are consistent with the international research by Parashar (2015) where it was found that hope to regain the ability to walk emerges in the initial phase of recovery post-SCI (Parashar, 2015).

Parashar (2015) referred to this as the 'inevitable optimism' that emerges in post- SCI rehabilitation and the most inherent characteristic among PWSCI. It is this optimism that spurs the hope of the PWP that they will recover and be able to walk again enabling them to use their emotions, personal and environmental resources to fuel this hope (Parashar, 2015). Hope allows PWP to disregard the prognosis that has been shared with them but that they are not fully able to accept. Thus, it is clear from this research that in the initial phase of the recovery, hope emerges as the will to walk again despite evidence to the contrary and is an essential theme in recovery. Thus, the newly disabled PWP focused their effort on physical rehabilitation that would enable them to walk again and often resisted other rehabilitation interventions that suggested that the injury was permanent and would require occupational and other accommodations (Parashar, 2015). It was further found that as time progresses, the reality of the situation is acknowledged and the ability to walk is no longer the main personal goal but becoming self- reliant becomes the main personal goal and their main purpose in rehabilitation (Parashar, 2015). The participants in this current study had been discharged from in-patient rehabilitation and had been re- integrating back to their community for a relatively short period of between four months and one year as per the inclusion criteria. As such, they may be in the early stages of living with a disability, and they are still trying to re-establish their occupational identity as PWP which requires occupational adaptation which takes time.

Identifying a desired occupational lifestyle was item 2. Most participants reported to have challenges with establishing a desired lifestyle. They reported being dissatisfied with the current occupational lifestyle, and they had difficulties in structuring and filling time with what they considered to be meaningful and valued occupations. This clearly demonstrates issues with the overall participation in occupations that are meaningful and purposeful to the participants. The ICF has enlisted participation as one of the components that contributes to health and well- being. Barclay et al. (2016) and Hammel et al. (2015) noted the impact participation has on the long-term health and well-being of individuals with SCI. They reported

that occupational participation improves the QoL outcomes and empowerment of PWSCI (Barclay et al., 2016; Hammel et al., 2015). Concurring to this study, in the international study, Alves & Bontjes (2019) conducted a scoping review to identify factors influencing participation in daily activities among PWSCI. In the study, participation in daily activities among PWSCI was found to be challenging and they identified some possible participation hindrances and facilitators such as self- efficacy, poor adjustment skills, secondary health problems, unavailability of cost- effective equipment, relearning capacities for performing daily activities, impact of natural and physical environment and social relations (Alves & Bontjes, 2019).

Although majority of the participants reported having an accessible immediate environment (home environments), the majority of the participants reported requiring some form of assistance with mobility in the public physical environment, such as on the roads and malls. Hammel et al. (2015) noted that environmental factors at the individual's home (micro), community (mesa), and society at large (macro) influences PWSCIs' everyday participation. It has been long asserted by social models of disability that more participation restrictions are created for PWD when encountering barriers in their physical, sociocultural, political, and economic environments (Hammel et al., 2015). One of the limitations with the current rehabilitation interventions is that the hyperfocus only on the physical and social micro-environment of the patient (Hammel, et.al., 2015) which, as previously stated, is adapted and highly supportive of their immediate health needs. This concurs with reports from the participants in this current study as none of them received any form of community integration intervention. Thus, all these factors contribute to the participants' reported dissatisfaction with their occupational lifestyle.

The majority of the participants in this current study reported expecting *success* (item 3) in a number of the areas in their lives. They reported that when they are faced with challenges, they have prospects of overcoming the said problems. They also reported that they had hope that all their goals would be attained, including the goal of walking again. As such, they did not feel helpless nor pessimistic about their future occupational engagement reflecting a positive sense of self efficacy.

Self-efficacy refers to a person's belief or sense of confidence in their strength to perform a task successfully in the future or to successfully overcome challenges encountered (Craig et al., 2019; Middleton et al., 2007). Concurring to deductions made from the participants in this study, self- efficacy has been shown to be a mediator of health outcomes, a significant contributor to the QoL and contributor to the overall subjective well- being among PWSCI (Bhattarai et al., 2021; Middleton et al., 2007). Lack of hope and being pessimistic may be signs of depression/anxiety. In this current study the anxiety and depression domain of HRQoL

tool administered, found that the majority of the participants, 48.28%, reported to be not struggling with anxiety or depression, but 41.38% reported they experienced depression and anxiety symptoms sometimes, only 10.34% participants reported to be having a clinical depression or anxiety. Thus, the present study's self- efficacy and prevailing hope helped the participants to still expect success in the future. Higher self-efficacy in individuals may be more inclined to undertake actions that promote their health and are more confident in their capacity to handle stress without going through psychological distress (Bhattarai et al., 2021), thus, accept responsibilities they are faced with.

The participants (n= 29) reported that they believed that they *accepted responsibilities* (item 4) for most of their personal actions and they did not overly self-blerase nor self-criticise. They also do not blame others or circumstance for their personal failures. Participants acknowledged that, at times, they do blame circumstances for their SCIs. However, instead of self- blaming, participants reported feeling grateful for life despite the hardship they are facing. Resilience refers to the human attributes that enable individuals to positively adjust in the face of substantial adversity (Kilic et al., 2013; Catalano et al., 2011). Thus, the participants' reported ability to accept responsibilities despite adverse challenges posed to them by the SCI may translate to being resilient. Consistent with this study, an earlier international longitudinal study carried out by Pollard and Kennedy (2007) demonstrated a range of resilient behaviours evident in SCI survivors which helps them to readjust and re-establish new ways to do things that are important to them. To further support this, Craig et al. (2013) noted that PWSCI's ability to maximise their independence in all areas of life indicated self- efficacy as well as resilience (Craig et al., 2013). Although PWSCI are reported to be resilient and adjusting to their new life, the occupational environment has a great impact on their overall re-establishment of their occupational identity as seen below.

Appraisal of the abilities and limitations was item 5 on the scale. This factor is related to the participants tendency to either over/underestimate their abilities and whether they do recognise the limitations they have. Majority of the participants (n= 28) reported to be fully aware of their abilities and limitations. They also admitted to under-estimating their abilities at times. In this regard, Byra et al. (2020) reported that appraisal of impairment plays a significant role in psychological adjustment after SCI. Consistent with this study, an international study conducted to determine the positive gains after SCI, participants reported to have appraised their current abilities and by doing things that are within their capabilities (Kennedy et al., 2013). Lamenting on post SCI abilities may impede on appraising the current abilities and that may affect the re- establishment of new ways to do things, QoL and one's psychological aspects (Kennedy et al., 2013; Kennedy et al., 2012).

Item 6 determined whether the participants *had commitments and values.* In doing so, the participants were asked if they have adequate commitment to a direction and purpose in life or whether they were uncertain about life's purpose and direction. Moreover, participants were asked if they hold values that are deviant to the values set by the society. Slightly more than 40% of participants reported to be confused about life at the time of the data collection. They reported having little desire to think much about life and the future as the plans they had on their life purposes were invalidated by the injury. This is consistent with what is reported in the international literature. Cotton (2012) reported that the PWDs in his study had a tenuous state of uncertainty about who they were, who they are now, and who they projected themselves to be in the future as a result of identity disruption because of the disability. On the other hand, more than half of the participants in the current study reported having a committed direction in life. They reported to be working on this commitment through ensuring that they intensely exercise so they can recover their walking abilities so they can continue with their preinjury roles that they had established their occupational identities on. To avoid the state of uncertainty alluded to by Cotton (2012), participants in this study worked hard to regain their pre- injury roles regardless of the facts and medical prognosis of their SCIs.

Recognises identity and obligations is item 7 on the scale. This factor explored the participant's view of self in one or a range of roles and whether they had a strong sense of identity emanating from the roles. Over 60% of participants reported being marginally committed to their previous roles. The lost roles and identities were closely interlinked with the loss of employment. As a result, the participants were left with a weakened sense of occupational identity. The ability to participate in meaningful life roles and activities outside the home can change and diminish after the SCI (Barclay et al., 2016). Employment/ work being an example of such activities and roles. Holmlund et al. (2018) reports that employment has a deep- rooted social meaning on which people construct their identities and fulfil their roles both in their families and communities at large. This was the case with the majority of participants in this study as, majority of them did not RTW and this affected their established occupational identities. Consistent to this study, Löfvenmark et al. (2016) noted that in the low to middle-income countries physical work/labour is a source of income for many, however, labourers who sustain a SCI are mostly excluded from this type of work, consequently increasing the risk of poverty for the whole family. Thus, it affected their established identities and obligations.

Item 9 (*Felt effective: Past),* Item 10 (*Found meaning and satisfaction in lifestyle: Past)* and Item 11 (*Made occupational choices: Past)*. Majority reported to have had average/normal occupational functioning in these items as they have lived 'normal lives' like every average person, and they had encountered 'normal' everyday challenges like everyone else. Isaksson and Prellwitz (2010) concurs with these results, as in their study, they reported preinjury

normal life where participants lived alone and had different jobs; lived an active life as horse jumpers and had a lot of friends. Moreover, in the study by Hughes et al. (2019), participants reported their current life situation to be inferior to their pre-injury life before they experienced SCI. Thus, SCI significantly affected the participants occupational functioning postinjury in these aspects.

From the discussion of the occupational identity scale items, an overall deduction can be made on how reestablished or disrupted the participants occupational identity was. This will be done through a discussion of the occupational identity client measure score as follows.

5.3.1.2 Occupational identity client measure scores

As noted from the previous chapters, occupational identity client measure scores of 50 and above on the continuum of 1-100, obtained from the OPHII tool, indicating that occupational identity was well established (good). Only 44% of the participants had a client measure score that was above 50 while the remaining 66% had client measure scores that were below 50. This indicated that most of the participants had disrupted occupational identity post SCI rehabilitation programme despite being considered to be on Landrum level IV or V prior to discharge. Laliberte-Rudman seminal work stated that an individual expresses their occupational identity through the activities they choose to do and how they perform them (2002). It follows then that the participants in this study had their occupational identity disturbed through being unable to do many of their day to day meaningful and purposeful activities as they desired. These activities are as indicated above from the discussed occupational identity items. There is no published research study that determined or explored occupational identity of the PWP post SCI rehabilitation. Thus, this is the first study to determine occupational identity of PWP post SCI in- patient rehabilitation. Below is a brief discussion of local and international studies that only aims to demonstrate how similar or dissimilar this study is to other illnesses and injuries like traumatic brain injury (TBI), stroke, ADHD, and multidrug-resistant tuberculosis (MDR-TB) disrupted occupational identity.

In the international study, Cotton (2012) found that participants' occupational identities were disrupted by TBI. Due to the fact that TBI causes cognitive impairments, participants with TBI experienced self-awareness issues more than PWP participants, which is another way that occupational identity disruption differed slightly from that experienced by study participants. In another international study was conducted to determine occupational Identity, competence, and environments among adults with and without ADHD (Paley Altit et al., 2019). Similar occupational identity client measure scores were obtained between adults with and without ADHD, thus indicating established occupational identity (Paley Altit et al., 2019). The results indicated established occupational identity for both cohorts (Paley Altit et al., 2019). The

results are not as surprising because ADHD is normally diagnosed in childhood and the establishment of identity begins in childhood and is ongoing. As such, there is no moment in time where their occupational identity was critically disrupted as seen from participants in this study. A South African research study was conducted to explore occupational adaptation of adults with MDR-TB who were undergoing long-term hospitalisation (Firfirey & Hess-April, 2014); similar to the participants in this study, it was found that adults with MDR-TB suffered occupational identity disruption as they lacked occupational choice, had experienced loss of some of their occupational roles and were mostly bored as they could not participate in their interests (Firfirey & Lucia, 2014). Thus, these stated published research studies are consistent with the results of this study on how illness/injury can affect one's occupational identity.

5.3.2 Occupational competence

Determining the occupational competence of the participants post SCI was the second part of the first research objective.

Like occupational identity, occupational competence was determined from the client measure scores on a continuum from 1- 100, with 1 indicating no development and 100 established occupational identity. Majority of participants in this study had disrupted occupational competencies.

5.3.2.1 Occupational competence scale item

A discussion on the more explicit reasons on how the occupational competence of the participants was disrupted will be discussed by looking at each of the items from the occupational competence scale, followed by their overall occupational competence client measure scores.

A question about whether the respondent was *maintaining a satisfying lifestyle* was item 1 in the occupational competence scale and 86% of the participants reported to be having some occupational functioning challenges in this regard. The difficulties in completing their range of roles, activities and the difficulties in filling their life space with adequate roles and projects/activities led them to experiencing unsatisfying lifestyles. Most of the participants reported losing their employment and being unable to engage in the leisure and social activities which were perceived to be the activities, roles and projects that they had difficulties in fulfilling. They, thus, also experienced loneliness at times. These findings are consistent with the published findings in previous studies on this topic**.** It has been generally acknowledged that PWSCI are less likely to engage in physically active lifestyles than people without SCI (Ganesh & Mishra, 2016). In an international study by Ganesh and Mishra (2016) it was found that both employment and physical activity were predictors of a satisfying lifestyle

and a good QoL among PWP. On the other hand, Post et al. (2020) found employment to be an important indicator of successful social and community integration. Maintaining social relationships, ensuring a good self- esteem and longevity of life are factors that have all been associated with participation in paid work (Post et al., 2020). Thus, having a sense of purpose and accomplishment that one gets through working and having a reason to get up in the morning contributed to what maintaining a satisfying lifestyle meant for the majority of the participants.

Employment goes hand in hand with an accessible natural and physical environment which Alve and Bontjes (2019) found to be a significant predictor of participation in daily occupations. As seen from this study, one of the reasons for a low RTW among the participants were their inaccessible physical environments (inaccessible workplaces, lack of transportation). Moreover, Ganesh and Mishra (2016) reported other reasons for less active physical lifestyle among PWP such as poor societal attitudes towards PWD, societies lack knowledge about activities suitable for PWP and also how they are able to engage in such activities.

In item 2, *fulfilling role expectations,* most of the participants reported challenges in this regard. The problems experienced were attributed to occasional/ increasing difficulties in meeting role expectations due to diminished physical capacities and due to losing major life roles such as their employment and the role of being a breadwinner. Roles give structure to a person's day, week or to time as certain activities associated with certain roles are done at specific times (Taylor, 2017). Disability may disrupt or terminate role performance (Taylor, 2017) as has been seen in this study. Concurring with the results of this study, an international study by Meade et al. (2015) to determine the importance of work among PWSCI, participants reported how much being employed assisted in fulfilling their role expectations such as paying their family bills and being able to contribute to sending their children to school. It goes without saying that having no employment and relying on the disability grant only, would affect one's ability to fulfil their role obligations.

Works towards goals was item 3 on this scale. Most participants reported that their life goals were on a hold and had been significantly impacted by the SCI. The main goal of most participants was to recover, walk again, so that they could continue to pursue their life goals which required money which they no longer had as they lost their jobs. The focus of recovery as participants' main goal is consistent with the international research by Parashar (2015) who researched the trajectories of hope after SCI. Parashar (2015) reported three distinctive themes emerged in the trajectory of hope: (1) Hope for a complete recovery; (2) hope for self-reliance despite the injury; and (3) hope for an optimum quality of life. Thus, the primary goal among PWSCI in a few years post injury and rehabilitation is to walk again (Parashar, 2015).

Moreover, Braaf et al. (2020) found that traumatic injury survivors, such as PWSCI, are anxious and uncertain about the future and many of them tend to put their goals on the side which was consistent with participants expressed views

Majority of the participants reported to be *meeting personal performance standards* (item 4) mostly in their bADLs, but reported limited abilities which enable performance that generally meets family and community expectations. These results are consistent with results in the international literature. Benedicto et al. (2022) reported good independence in self-care activities, respiration and sphincter management, except for mobility in PWP. One of the reasons for such good performance standards in bADLS may be that one of the main focuses of the SCI in- patient rehabilitation is facilitation of independence in bADLs. However, the results of this study and above reported studies (Joseph, 2011; Van der Veen, 2018) concurred that Landrum outcome level V and VI obtained by the participants are not the true reflection of the anticipated rehabilitation outcomes as many of the participants were not well reintegrated into their communities which was the expected outcome of these two Landrum levels.

Whether the participants *organise time for responsibilities* was item 5 of the scale. Majority of the participants reported to have some occupational challenges in this regard. They reported to have ample time but have less occupations to perform or less responsibilities to fulfil that may require such time management. Barclay et al. (2011) reiterated that engaging in a variety and balance of occupations enables us to structure time use, express ourselves and find meaning in our lives. Moreover, Yerxa (1967) in her seminal work reported that one's daily configuration of occupations is associated with life satisfaction, and this is one of the tenets of occupational therapy. The international literature is consistent with these results as it reported that the organisation and use of time after a SCI drastically changes as one may need more time to engage in bADLs, may not be able to engage in other responsibilities such as a paid employment or education that a person did preinjury (Barclay et al., 2011). Moreover, Barclay et al. (2011) reported how work organises and structures one’s day while giving a person a sense of purpose. Lack of participation in leisure activities is another contributing factor in this regard. Earlier population-based studies have found that the majority of PWSCI do not perform any type of leisure activities or sports of their interests (Martin Ginis et al., 2010; Anneken et al., 2010). This concurs with the results of this study as the majority of the participants were unemployed and reported to have no accessible recreational centres where they could explore or engage in new or previous recreational activities. Thus, having no structure to their time use.

In item 6, *Participating in interests*, all participants reported that their pursuit of interests was interrupted by the injury. These experienced challenges were mostly because of the lack of accessible recreational centres and difficulties in adapting their previous interests as well as exploring alternate interests. The unstimulating and under-resourced communities were reported to further aggravate these challenges. Consistent with these results, an international study by de Barcelona España Gifre and Valle (2014) provided that the majority of PWSCI described their lives after their SCI as shifting from an identity associated with high level of activity to one of inactivity and having less interests. Moreover, population-based studies have found that the majority of PWSCI do not perform any type of leisure activities or sports of their interests (Martin Ginis et al., 2010; Anneken et al., 2010). Less participation in one's interests may lead to an unsatisfying lifestyle and loneliness as reported by most of the participants. Robinson-Whelen et al. (2016) noted that loneliness is common among PWSCI. Loneliness may be associated with having fewer social occupations and interests, thus affecting one's autonomy. Loss of autonomy in choosing and performing activities is a major contributor to psychological distress and may negatively influence a person's self- concept and lower their self- esteem (Blanes, Carmagnani, & Ferreira 2009 cited in Van der Velde et al., 2013). Thus, having the functional capacity to be self-managed, self-determined and participate in activities of choice and interest within one's community are important goals for adjustment and re-establishing one's occupational competence and occupational identity.

The items 7, 8 and 9 (*Fulfilled roles: Past, maintained habits: Past, and Achieved satisfaction)* explored the participants occupational competences before they sustained SCI. The majority of the participants reported to have had generally good occupational competence before the SCI. This is consistent with both the local and international literature that indicated that, prior to the SCI, PWSCI lived normal lives and that were similar to people without SCIs, whether they were working or not working (Phillips et al., 2018; Oliveira et al., 2021). This implies that they had a previously established sense of occupational competence.

Therefore, from these discussed items, it is easier to decipher the extent of the disruption to the participants' occupational competence which will be described below.

5.3.2.2 Occupational competence client measure scores

In this current study the participants' occupational competence client measure scores ranged between 41- 66, which were slightly higher than the client measure scores for the occupational identity scale although 60% of the participants had occupational competence client measure scores of below 50. This result indicated disrupted occupational competence among most of the participants.

To the best of the researcher's knowledge, there is no international nor local published research that investigated occupational competence among PWP and most research on occupational competence has been with persons suffering from psychosocial illnesses. There have been a few international studies evaluating occupational competence with different diagnostic cohorts of participants. Although the process of disruption of occupational competence is different in each diagnostic cohort, what is similar is the resultant disrupted occupational competence. This is a reason why such disrupted occupational competences per different diagnostic cohorts are briefly discussed here.

In a scoping review to determine the impact of dementia on occupational competence, occupational participation and occupational identity for people who experience onset of symptoms of dementia while in paid employment, it was found that dementia affected occupational competence (Andrew et al., 2019). Disruption of occupational competence was found to result from forgetfulness, making of critical mistakes, a slowing work pace in completing tasks, difficulties maintaining concentration, remembering work routines and poor coping with normal work stressors (Andrew et al., 2019; Chaplin & Davidson, 2016). A decline in trust in one's ability to competently function within the workplace has also been identified as a problem in this cohort of persons with dementia, negatively influencing occupational competence (Chaplin & Davidson, 2016). In another study, Paley Altit et al. (2019) found occupational competence of the adults diagnosed with ADHD to be lower as compared to the adults without attention deficits (Paley Altit et al., 2019), thus indicating disrupted occupational competence. These international research findings are consistent with the results in this current study in so far as indicating that a disabling condition, like SCI, affects occupational competence but in the case of a PWP the symptoms causing the reduction in occupational competence are likely to be somewhat different to participants with dementia and ADHD.

5.3.3 Occupational Environment

The relationship between the occupational environment and occupations is intertwined (Whiteneck et al., 2009) as the environment can either facilitate or become a barrier to occupational performance. Whiteneck and Dijkers (2009) highlighted the importance of linking the relationships between the environment factors and the occupational participation of people with impairments and disabilities. Moreover, the WHO's Social Determinants of Health 2030 emphasise that environmental factors, rather than only human behaviours, have an impact on participation and that environmental factors may have to be changed or adapted to optimise participation (WHO, 2017). From these statements, it is apparent that the occupational environment would influence both occupational identity and occupational competence as it influences occupational performance.

5.3.3.1 Occupational environment scale items

Similar to the discussion of the occupational identity and competence items, the discussion below details the results of the specific items that elaborates on how occupational environment was reported to influence participants occupational participation, and thus how their occupational environment was to disrupt occupational engagement and participation. Inaccessible physical environments, and disability unfriendly transportation- being the most reported environmental barriers (Akter et al., 2019; Chang et al., 2018) both locally and internationally.

Of the items that made up the occupational setting scale, *home life occupational forms* was item 1. The item determined whether the physical, cognitive as well as the emotional demands of these iADLS (particularly home establishment and management as well as meal preparation activities) challenged/stimulated the interests and abilities of the participants. On those iADLs that are performed in the home setting, the majority reported to have less challenges with performing those occupational forms mostly because they could adapt and modify their home environment and get assistance/support from their family members. Consistent with this study, an international study by Noor (2022) was conducted to determine the experience of performing IADLs by PWP. The results reported that the majority of PWP relied on the caregivers, such as parents, spouses, siblings, friends or hired caregiver for assistance in the iADLs participation. The support provided was not only physical support, but also mental and emotional support (Noor, 2022). Furthermore, Noor (2022) reported that adapting/modifying the home environment for iADLs included, lowering the height of the cooking stove or dishwashing basin to the wheelchair level so as to be reachable. This is also consistent with this study. Caution must be placed on ensuring that PWP do not overly rely on their family members/caregivers for the activities they are capable of performing, as this may facilitate dependency and participants taking on a ‘sick role’. Jeyathevan et al. (2019), reported a high prevalence of dependency-inducing behaviours sustaining parent-child caregiving relationships among PWSCI who are cared for by their parents. These researchers reported that parents feel a sense of obligation to care for their offspring regardless of their offspring having the capabilities of helping themselves (Jeyathevan et al., 2019). Although this behaviour may be regarded as a parental instinct, the behaviour encourages dependence and in the long run it would affect the sustainability of the caregiving relationship. Thus, the caregivers must learn when to step back from helping so as to reduce dependency-inducing behaviours and encourage independence among PWSCI (Jeyathevan et al., 2019).

Items 2, 4 and 6 (*Major productive role (occupational forms), Major productive role (social group),* and Major *productive role (physical space, objects, and resources)* respectively) will

be discussed together as they all relate to aspects of work/studies and social settings. In all these items, the majority of the participants reported to have severe occupational functioning challenges. The most commonly reported challenges were with their work occupational environment undermining their RTW. Consistent to these results, it is reported in the international literature that the employment rate among PWD aged 18 to 64 have remained consistently low at the rate of 34%, despite the enactment of disability rights laws, advancements in medical treatment and assistive technology, and social developments that promote inclusion and diversity (O'Neill & Dyson-Hudson, 2020; Houtenville, 2018). Similar trends are also seen in local literature as it is reported that RTW and maintenance of employment among PWSCI remain low in South Africa (Swart et al., 2023; Aiachini et al., 2016). The participants all reported achieving Landrum outcome levels IV and V on discharge, but a discrepancy was evident between anticipated the level outcome achievement descriptors and their actual lives in terms of employment and community integration because they were unable to RTW or fully reintegrate into the community despite their Landrum outcome levels. This raises the question for clinicians as to whether achieving a given Landrum outcome level is based on one's potential for community reintegration or on their occupational reality, which takes into account the communal contextual factors at the time. Therefore, all the factors that influence RTW, including employment barriers and facilitators, must be considered when deciding readiness for discharge based on their Landrum outcome level.

Most of the reported barriers and facilitators to employment in the literature were within the work environment and personal domain (Dada, 2018). Similarly, some participants in this current study were rejected for re-employment by their employers citing that the workplace is inaccessible and not well adapted for PWD (Dada, 2018; Maja et.al., 2011). Another barrier to RTW was reported to be employers' negative attitudes and misconception about PWD and their capability to be productive (Dada, 2018). All these barriers exist despite the Code of good practice on the employment of persons with disabilities within South African Labour Act of 1989 that emphasises reasonable accommodation or alternative duties for employees with disabilities to facilitate their RTW and thus improve their employment rates (Labour Relation Act 66 of 1995).

Item 3, *home life social group,* looked at the social support at home, and whether the participant's interaction and collaboration/skills are acknowledged in their home environment. Majority of participants reported having good social support at home provided by their parents or siblings; some married participants reported that their parents moved in with them to become their primary caregivers. These results are consistent with other studies. In Botswana, it was reported that the family provided most emotional and practical social support for PWSCI

which improved their life satisfaction (Löfvenmark et al., 2016). These authors further reported that good social support was mostly provided by the close family which included the biological family, primarily the mother, spouse, children, and siblings other than the relatives (Löfvenmark et al., 2016). The study by Jeyathevan et al. (2019) concurred that the role of caregiving most often was undertaken by the parents when an individual is a young adult and not married (Jeyathevan et al., 2019).

Van Leeuwen et al. (2010) investigated social support and life satisfaction following a SCI during and up to one year after inpatient rehabilitation. These researchers described three different types of social support provided to PWSCI, viz: “1. everyday social support” (referring to social companionship and daily emotional support), “2. support in problem situations” (referring to instrumental, informational support, and emotional support in times of trouble), and “3. esteem support” (referring to support resulting in self-esteem and approval) (Van Leeuwen et al., 2010:266). They found that esteem support was still high one year after discharge from inpatient rehabilitation while everyday social support and support in problem situations decreased with time (Van Leeuwen et al., 2010). The reason for such decline was linked to the assumption that PWSCI had readjusted to their limitations and had navigated their way around so that constant everyday social support was not necessary (Van Leeuwen et al., 2010). Similarly, the majority of the participants in this current study reported to be independent in their day-to-day bADLs, and for this reason they needed limited every day social support as well.

Item 5, *home life, physical space, objects, and resources,* relates to the availability of resources, physical space in the home environment to enable occupational performance. Majority of the participants reported having no occupational performance challenges in this regard as their home environment was mostly accessible and had the resources to enable occupational performance. This result is consistent with the local published research that the commonly reported accessibility barriers were in public community spaces, lack of short- and long-distance transport (Bezuidenhout et al., 2023; Chang et al. 2018) and not the home environment. The few participants that reported inaccessible home environments were from rural village communities. The major reported barriers were inaccessible yards and pit toilets. Concurring to this result, a study done in Botswana Löfvenmark et al. (2016) reported pit-latrines and water accessible only outside the home to be some of the challenges in the rural villages.

Items 3, 6 and 9 related to the leisure occupational settings. More than two thirds of the participants reported challenges with engaging in previous leisure forms as their environmental context was inaccessible or finding new leisure forms because of limited

resources in their communities. The lack of accessible recreational centres and financial resources to purchase relevant equipment hindered leisure performance for most of the participants. This is consistent with the international study by Hwang et al. (2016) who reported that pain and the costs of obtaining facilities or equipment were obstacles to engaging in leisure activities (Hwang et al., 2016). Inconsistent to this study, pain was not reported to be a hindrance to leisure participation.

Majority of the participants experienced occupational challenges in most of the reported items under this occupational environment scale. As a result, 82.76% of the participants had occupational environment client measure scores of below 50, which indicated disrupted occupational environment. It was for that reason that participants obtained lower client measure scores than for both occupational identity and occupational competence. This is in line with the established knowledge that the environmental factors can either facilitate or hinder occupational performance.

5.4 Health Related Quality of Life following a SCI

This section discusses the second objective of this study which was to determine the HRQoL of PWP participants after a period of community reintegration due to a SCI following discharge from an inpatient rehabilitation facility. While the HQOL was only formally measured once during the data collection discussion during the interview to collect the data on the OPHI II, participants did verbally indicate that in general they felt their HRQoL was reduced when compared to before their SCI.

International literature suggests that PWSCIs tend to have lower HRQoL compared to the general population (Diop & Epstein, 2024; Boakye et al. 2012). This was consistent with the results in this study where most participants recorded having moderate problems in mobility, usual activities and pain, a lower number of participants indicated problems with depression and anxiety and only a few reported problems with self-care were reported. The results of each dimension making up the EQ-5D-3L are discussed below.

Dimension 1 was about mobility and the majority of the participants reported having moderate problems with mobility and it had the highest mean rank of all the dimensions. Participants reported that their mobility was mostly challenged in the community, rather than in their homes. This is consistent with local and international studies. Locally, Fredericks et al. (2024) reported that both natural and man-made environmental barriers had a great impact on the mobility of the wheelchair-using community. Additionally, wheelchair users must travel to the pick-up location when using public transportation, which can be difficult due to environmental obstacles like gravel and hilly roads and no or wheelchair unfriendly pavements (Fredericks

et al., 2024). Mothabeng (2011) also reported that PWSCI in the townships expressed dissatisfaction with their community accessibility, Topographical features and the geographical landscape of the roads, such as steep slopes and gravel or sandy roads, made accessibility in the community challenging and nearly impossible for wheelchair users (Mothabeng, 2011). These results are also consistent with Van der Veen (2018) results which also reported mobility challenges among PWSCI that received private in- patient rehabilitation in Gauteng. Internationally, Barclay et al. (2016) reported that accessibility and mobility remains a challenge for PWD in Australia regardless of the Universal design principles that have been put in place. Moreover, earlier, Lemay et al. (2012) reported mobility is one of the most restrictive domains after SCI that thwart the accomplishment of social roles and socially meaningful activities that include mobility. Thus, from these factors, it is clear that mobility challenges are not just a local problem that affects HRQoL.

Self- care activities, dimension 2, within the EQ-5D-3L referred to washing or dressing. The majority of the participants reported to be independent with regard to their self- care activities and this dimension had the lowest mean rank of the 5 dimensions. Concurring to these results, in a study Abu-Baker et al. (2021) confirmed that participants with paraplegia had higher self-care abilities than those with quadriplegia This is due to the fact that PWP can use their hands and upper limbs which enhances their abilities to perform self-care activities independently (LaVela et al., 2016; Alves & Bontjes (2019). This result is also consistent with a cross-sectional study of Brazilian adults with SCI, in which Coura et al. (2013) assessed their participants' self-care ability using Self-Care Agency Scale. Their results showed that around 70% of participants had good self-care ability (Coura et al., 2013). It has been reported that the focus of the SCI rehabilitation programmes is mostly in promoting independence in self-care and facilitating the return to activities which support quality of life which may explain why once the patient is independent in self- care activities they are deemed ready for a discharge (Krysa et al., 2022).

The *usual activities,* dimension 3, referred to work/study, housework, family or leisure activities. Most of the participants reported having moderate challenges under this dimension. The commonly reported problem was with occupational domain of work and leisure participation. The majority of the participants could not return to their previous jobs because of limited physical capabilities, lack of support and reasonable accommodations in the workplace and transport difficulties. Consistent with these results, Post et al. (2020) reported an average employment rate of 38% in a worldwide survey among people with SCI, but that the rate varied across the countries, between 10.3–61.4%, with developed countries having higher employment rates. For most participants, the issue of inaccessible transportation and challenges in community mobility further disadvantaged their RTW. Concurring with this,

Holmlund et al. (2018) reported that RTW after SCI involves challenges in navigating physical, employment and social contexts.

Leisure activity participation was also another problematic area within the gambit of these usual activities. Most participants reported to not be able to participate in their previous interests and that their communities do not have accessible recreational centres to explore and experience new leisure activities has already been discussed above. The international studies are consistent with this result. A systematic review indicated that the majority of PWSCIs do not perform any type of leisure activities or sports (Kawanishi & Greguol, 2013). This is regardless of the knowledge that participation in social and leisure activities promotes a meaningful life and improves QoL (Filipcic et al., 2021; McQuoid, 2017).

Pain/discomfort, dimension 4, in this study majority of the participants reported to be living with some pains which affected their HRQoL. Pain in a SCI is either neuropathic or musculoskeletal and is considered a secondary health condition (Pilusa et al., 2021). A recent international systematic review investigated the prevalence of chronic pain among PWSCIs, and pain was found to be prevalent at the rate of 68% (Hunt et al., 2021).

These findings are consistent with the international and local studies in this regard. Locally, Pilusa et al. (2021) found that pain was the most prevalent secondary health condition among PWSCIs. Internationally, Felix et al. (2021) found the overall prevalence of pain to be 80% among PWSCIs. Earlier, Modirian et al. (2010) in a longitudinal study that included 1,295 spinal cord injury patients, 65.7% of them reported the presence of moderate pain and 26.3% had never suffered from any pain, while in this study a much lower figure (10.34%) reported no pain. Thus, pain may limit occupational engagement across the continuum of participation and decrease quality of life (Silvestri, 2017).

Depression, dimension 5, is also regarded as a common secondary health condition after SCI. Fewer participants in this study reported problems with depression and anxiety with the lowest mean rank of the five dimensions. This result was surprising in light of the impact a SCI has on the ability to participate in purposeful and meaningful life occupations which is known to decrease life satisfaction (Khazaeipour et al., 2015). However, 41.4% reported to have moderate anxiety/depression and 10.3% had severe anxiety/depression, thus overall, 51.72% participants reported experiencing feelings of depression. These results are consistent with published results in this regard. In a cross- sectional study of PWSCIs, Khazaeipour et al. (2015) reported that 49.3% participants experienced mild to severe depression. Moreover, in a long-term population-based study by Lim et al. (2017), it was reported that younger patients with TSCI have a higher risk of anxiety or depression post-discharge (Lim et al., 2017). In an earlier longitudinal study, Kennedy and Rogers (2000) found a significant correlation between

depression and anxiety among PSCI but reported that results showed that both the feelings of depression and anxiety lessened over time (Kennedy & Rogers, 2000). In the South African context, Joseph et al. (2023) reported contrasting mental health results between PWSCIs that receive rehabilitation from private and public rehabilitation hospitals. Those treated in the private sector reported better mental health status than those who received their health care in the public sector (Joseph et al., 2023). Reasons for this discrepancy was reported to be PWSCIs being of a higher socioeconomic standing and the experiencing of less of a financial burden by those treated in the private sector as compared to those treated in the public sector (Joseph et al., 2023). Other factors that are thought to influence mental health of the PWSCI include the quality of social relationships, severity of secondary conditions such as pain, inaccessible environments and limited abilities to do those activities that they used to find meaning and purpose from (Zürcher et al., 2019; Fekete et al., 2021). Thus, clinicians must be mindful of all these different factors that have the potential of causing mental health challenges among PWSCI. In fact, PWP should be screened for depression and anxiety as they are prone to experience either or both of the two because of the loss experienced. It is beneficial that PWP are seen by psychologists and occupational therapists at TRH, who can recognise and intervene on these concerns. It becomes problematic when they are discharged and not seen by community occupational therapists and/or psychologists.

As noted above, the second objective of this study was to determine HRQoL of PWP post SCI. From the discussed five dimensions of the EQ-5D-3L tool, the majority of the participants had moderate challenges in most of the dimensions, thus, reducing their overall HRQoL. This is consistent with the published literature. In a study to determine the association between health conditions and HRQoL among PWSCI, Rivers et al. (2018) found consistent results to this study that secondary health conditions such as pain, spasms, depression reduces HRQoL among PWSCIs.

5.5 Association between occupational identity, occupational competence, occupational environment and HRQoL among participants

The third objective of this study was to determine the association between occupational identity, occupational competence, occupational environment and HRQoL.

5.5.1 Correlation between occupational identity, occupational competence and occupational setting (environment)

The results of Spearman Rank Order correlation showed a positive strong correlation between occupational identity and occupational competence measurement scales at 0,646906 with positive weak correlation (0.4-0.5) between occupational identity and the occupational environment client measurement scales (0,4234750) and positive significant correlation between occupational environment and occupational competence scale (0,531215).

Over a lifetime, people develop skills that enable them to perform activities that are meaningful to them and fulfil roles they ascribe to (Taylor, 2017; Walder & Molineux, 2017). Similarly, occupational identity is formed overtime through the achievement of occupational competence experienced in performing and participating in meaningful activities and fulfilling one's ascribed roles. Occupational competence and occupational identity establishment is facilitated if the occupational environment allows the individual such an experience (Martínez-Pernía, 2020; Taylor, 2017). A person constructs a sense of oneself, occupational identity, as an occupational being through occupational participation and within an occupational environment (Martínez-Pernía, 2020). This corroborates the results described above showing the correlation between these three variables.

In the study by Chang et al. (2018), the environmental factors such as social support, societal attitudes, built environments, transportation and even governmental policies have all been found to influence PWSCI's personal participation in everyday activities. These environmental factors can either directly or indirectly influence a person's participation (Chang et al., 2018). Participation is occupational performance which, as alluded to above, is central to both occupational competence and occupational identity formation and maintenance. Thus, a limitation or challenge to occupational performance in the occupational environment would also cause some disruption in occupational competence and occupational identity. This supports the results of this study that indicated a significant correlation between occupational environment and occupational competence.

In support of the significant correlation between occupational identity and occupational competence, Walder and Molineux's (2017) systematic review of adults' experiences of adjustment to chronic disease, major illness or injury: occupational adaptation and

reconstruction of occupational identity affirmed a significant correlation between occupational identity and occupational competence (2017). In the study, the concepts of occupational identity re-establishment, developing occupational competence and adapting to occupational demands were found to be central to the process of adjustment among adults with chronic diseases and major illnesses or injuries (Walder & Molineux, 2017). Similarly, Martin-Saez and James (2021) in their study on occupational identity disruption post stroke, found a tacit link between occupational competence and occupational identity. In that study, stroke survivors reported to having less meaningful lives due to the lack of occupational competence required to perform their meaningful occupations, having feelings of being under-occupied and having meaningless routines, because of unstimulating or under resourced environments (Martin-Saez & James, 2021). From these studies a correlation between occupational identity and occupational competence can also be deduced.

No study was identified that explored these three variables in a population of PWP neither locally nor internationally, therefore, this is the first study that attempted to determine the correlation thereof.

5.5.2 Correlation between occupational identity, occupational competence and EQ-5D-3L five dimensions

Spearman rank order correlation was conducted to determine the correlation between the client measure scores of the occupational identity, occupational competence, and the occupational environment scales and the five HRQoL dimensions/domains of EQ-5D-3L, viz, (a). mobility, (b). self- care, (c). usual activities, (d). pain/discomfort and (e). anxiety/depression. These five HRQoL domains are scored on a Linkert scale with the highest value, score 3, indicating severe problems within the variable being rated. While on the other hand, the higher values on the occupational identity scale, occupational competence scale and occupational environment scale indicate good functioning. The negative correlation between the factors suggests that these two measures are not measuring the same things. None of the five HRQoL domains of EQ-5D-3L had significant correlation with occupational identity, occupational competence and occupational environment client measure scores ($p = <0.0500$). This could be because the EQ-5D-3L tool does not provide the overall HRQoL score while the client measure scores are the total scores of the three occupational related variables. The goal in this current research project was not to associate each of the five HRQoL dimensions with the dimensions of the three occupational related research variables, but to correlate the overall HRQoL score with the other overall research variables. The reported lack of correlation between five dimensions of EQ-5D-3L and the three occupation related variables is not surprising. Unlike HRQoL five-dimensions, occupational identity, occupational

competence and occupational environment are broader concepts. As noted above, it might have been different if the tool provided one overall HRQoL score that could be correlated with other overall client measure scores of the occupation-related variables.

Occupational identity encompasses complex connections comprising both individual and collective components that define a person's identity as an occupational being based on past experience that impacts occupational engagement in the present and also projects to one's future (Hansson et al., 2022). Furthermore, occupational identity encompasses being, doing and becoming that occur in the social, cultural, and political dimensions of the environment (Hansson et al., 2022). Thus, the HRQoL five dimensions individually cannot be significantly correlated with such a broad concept. It is also true that some aspects of one's occupational identity are vulnerable to being affected by some of the EQ-5D-3L dimensions as it was also seen in this study; with an apparent example being the issue of mobility and accessibility.

It was surprising that there was no correlation between the occupational competence client measure score and any of the five EQ-5D-3L domains. This is because, as discussed above, participants reported similar problems related to the three occupation-based variables to those found in the EQ-5D-3L, including difficulties carrying out daily tasks like work and leisure activities and mobility issues that impacted certain aspects of occupational competence. Some correlations were therefore anticipated.

The lack of correlation may be due to the fact that occupational competence takes into cognisance the individual's overall occupational performance in a wide range of occupations that influence their occupational identity and not only one single aspect on their overall occupational identity. The same is true with occupational environmental as environmental factors are multifactorial and include aspects such as physical, social, attitudinal factors (Chang et al., 2018) and could not as such correlate with individualised dimensions of the EQ-5D-3L.

In summary, the association between PWP's HRQoL characteristics and occupational identity, occupational competence, and occupational environment was investigated for the first time in this study. Thus, occupational identity and occupational competence were found to be significantly correlated; additionally, occupational competence was found to be significantly correlated with occupational environment, whereas occupational identity had a weakly positive correlation with occupational environment. The five HRQoL dimensions, however, did not significantly correlate with occupational identity, occupational competence, or occupational environment. This suggests that occupational identity, occupational competence, and occupational environment are interdependent, although for the reasons indicated above, none

of the five HRQoL dimensions, singularly, influenced occupational identity, occupational competence, or occupational environment.

5.6 Study limitations

Although this study highlights significant new information as to the existence of occupational identity, occupational competence and occupational environment disruption among PWP post in- patient rehabilitation, this study results cannot be generalised to total PWP population in Gauteng, South Africa, due to the small research sample as further elaborated below. Thus, the results of this study should be interpreted with caution.

The sample of this study was small (29) and fell short of the calculated sample size estimation of 35. The study sample was significantly affected by patients that could not be contacted due to incorrect numbers documented in their hospital records and phones on voicemails or being unanswered. Some participants declined to participate while few patients were reported to be deceased. Even participants that consented to participate, the majority of them could not be accessed physically as they were no longer residing in Gauteng. As such, most of them were contacted telephonically. The sample also included only patients that had been in-patients at the single public sector rehabilitation Hospital in Gauteng and did not include patients that may have been treated in the private sector rehabilitation hospitals that provide services to a different stratum of the South African population.

The EQ-5D-3L tool only measures the dimensions of HRQoL and not the overall QoL. Moreover, the tool did not provide a single HRQoL value which would indicate the overall HRQoL of the participants. Occupational identity and occupational competence are broad concepts that may have been better to be correlated to the QoL tool that broadly determined QoL and not just the dimensions of HRQoL. Lastly, although the OPHI II tool was determined to be valid to be used in different contexts, still, it was developed internationally and there is scanty literature regarding its sensitivity in the South African context.

5.7 Summary of discussion

This chapter discussed the results as set forth in chapter 4 of this research report. The results discussed included the demographic and medical information of the participants as obtained from the demographic questionnaire; participants' occupational identity, occupational competence and occupational environment as obtained from the OPHI II tool and their HRQoL information as obtained from the EQ-5D-3L survey tool. These results were discussed in relation to the three objectives of the study and were linked to the local and international literature.

The demographic results revealed that the majority of the participants were male, between 34-40 years and most of them suffered TSCI due to assault. Thus, TSCI was the common cause of the SCI. Participants were discharged on level 4 and level 5 of Landrum outcome level which meant that they were ready to be community re- integrated (level 4) and that they were fit to return to their jobs (level 5). The majority of the participants were employed prior to acquiring the SCI and most could not return/continue with their employment regardless of receiving vocational rehabilitation during their in- patient rehabilitation. Thus, the demographic information of the participants was consistent with demographics of PWSCI from local and international studies.

From the results and the discussion above, the study demonstrated that PWP had developed occupational identity and competence prior to SCI, and as a result of SCI, these variables were disrupted. Despite undergoing spinal rehabilitation, they are still striving to reestablish their occupational identity and competency as a process which is ongoing and linked to their overall occupational adaptation and acceptance of the disability. The discussion demonstrated how their unsupportive occupational environment hindered their efforts and severely impacted their occupational competence and, thus, their occupational identity. The results also show that the occupational therapy services at PHC level, which are currently limited, are necessary to support community reintegration and, consequently, the re-establishment of occupational identity and occupational competence and advocacy for an accessible wheelchair friendly community among PWP. Consequently, this would enhance PWP HRQoL.

The EQ-5D-3L tool measured the HRQoL in 5 dimensions and the results indicated that the majority of the participants had reduced HRQoL following the SCI. Consecutively, the inferential association between occupational identity, occupational competence, occupational environment and HRQoL were determined. A significant association was found between PWP's occupational identity and occupational competence, occupational competence and occupational environment, while a weak association was found between occupational identity and occupational environment. On the other hand, no significant association was found

between occupational identity and occupational competence, occupational environment and each of the five HRQoL dimensions. These indicated the complexity of occupational identity and occupational competence and that they consider more than what each HRQoL dimension examined.

The next chapter will conclude the whole research report and the recommendations for the clinical practice and future research would be discussed.

CHAPTER 6 CONCLUSION

6.1 Introduction

This concluding chapter summarises the previous chapters and provides key findings and conclusion of this research study. Recommendations are provided for clinical practice and future research.

6.2 Main findings of study

To improve the rehabilitation services provided to PWP, there is a need for evidence- based practice that would inform the clinicians about the needs of PWP. Furthermore, there is a necessity for occupational therapists to understand the occupational nature of humans. Through understanding the occupational identity and occupational competence processes and how these critical factors can be disrupted by illnesses or injuries, the longer- term post hospital care needs of the PWP will be better acknowledged and addressed. Moreover, the knowledge into this aforementioned process will equip the clinicians to understand how to assist the clients in reestablishing their occupational identity and occupational competence. This study attempted to provide this knowledge. Thus, this research study aimed to determine the extent to which PWP experience changes in occupational identity, occupational competence and occupational environment post spinal cord injury rehabilitation and if these occupational -related variables are associated with each other and the PWP's HRQoL.

Out of 72 potential individuals that made up the representative sample, the researcher required 35 participants to make the calculated required sample. Only 29 participants consented to participate in the study while other participants could not be contacted, found and others refused to participate. Descriptive and inferential analysis were used to analyse the quantitative data obtained from the two tools.

Majority of the participants were males and 33.4 years was the mean age of the sample. Many of them suffered TSCI due to assaults and were employed prior to the SCI. Only few participants returned to their work, and most could not return to their previous work despite a vocational rehabilitation in their hospital rehabilitation. This was reported to be mainly because they could not be reasonably accommodated at their previous employment. Some reported challenges in using public transportation for their day-to-day needs and the financial expense of hired cars (Uber, Bolt etc) Most participants reported losing their previous leisure activities due to their SCI as their communities were not accessible, and the community did not have accessible community resources where they can explore new leisure interests. This is regardless of Landrum outcome level IV and V of which majority achieved upon their discharge indicating that the participants were expected to be able reintegrate in their community

successfully. No participant had had any post discharge community reintegration rehabilitation service.

The first research question set for this study was: What changes do PWP experience in occupational identity, occupational competence and of the occupational environment post SCI rehabilitation within TRH?

This study found that the majority of the participants were found to have disrupted occupational identity and occupational competence post spinal cord injury rehabilitation. Most obtained client measure scores of below 50 on both the occupational identity and occupational competence scales. On the other hand, their past occupational identity and occupational competence indicated established identities and competences prior to the SCI. On the occupational environment scale, the majority of participants obtained client measure scores of below 50 indicating that their occupational setting provided more hindrances than facilitators to the re-establishment of their occupational identity and occupational competence.

The second research question was: Is there an association between occupational identity, occupational competence, occupational environment and HRQoL post SCI rehabilitation within TRH?

This research found that, majority of the participants had reduced HRQoL and challenges in most of the HRQoL dimensions were reported. Majority of the participants reported having some challenges with their mobility and mostly with accessing their community physical environment than their respective homes. On the other hand, performing self – care activities did not pose challenges for most of the participants. While for usual activities, the majority of participants reported to be having some challenges; this was the case as the majority of participants could not return to their jobs, and experienced challenges with performing their leisure interests. Pain/discomfort was also the common HRQoL dimension of which the majority of the participants experienced challenges, while half of the participants reported experiencing symptoms of depression sometimes, only three reported severe depression.

The inferential statistics reported a strong positive correlation was found between occupational identity and occupational competence, occupational competence and occupational environment, while a weak positive correlation was obtained between occupational identity and occupational environment. Moreover, a weak correlation was found between each of the five dimensions of the EQ-5D-3L and occupational identity, occupational competence and occupational environment.

Therefore, SCI injury disrupts the PWP occupational identity and occupational competence, moreover, occupational identity, occupational competence and occupational environment are correlated while they have a weak correlation with HRQoL five dimensions.

6.3 Implications of the research to the practice of occupational therapy

Studies in occupational therapy have examined how occupational identity and occupational competence relates to illnesses, injuries and/or to other health conditions. These studies include the following studies; A study on occupational identity and occupational competence in relation to employed people with dementia (Andrew et al., 2019); The relationship between homebound status and occupational competence, and its effects on health-related quality of life (Ishibashi et al., 2013); An exploration into the occupational identity of women following breast cancer and treatment: A qualitative study (Hopkins et al., 2024); Occupational identity, competence, and environments among adults with and without attention deficit hyperactivity disorder (Paley Altit et al., 2019); Defining occupational competence and occupational identity in the context of recovery in schizophrenia (Tan et al., 2020). All these studies provided valuable information in understanding the process of occupational identity and occupational competence development, disruption and re-establishment in relation to the cohort studied. Occupational therapists are well apprised when intervening with the studied groups. Furthermore, policymakers are also apprised in knowing the general needs of the studied groups as far as occupational therapy services needs and resources are concerned.

To the best of the researcher’s knowledge, no study exists that studied occupational identity and occupational competence of PWP post rehabilitation in the low- middle income context. From this study, a clearer understanding of the phases PWP goes through in renegotiating their occupational identity and occupational competence was established. Thus, the study provides insight into the re-establishment of occupational identity and occupational competence among PWP post rehabilitation.

The study also highlighted that the Landrum outcome levels, which are utilised to indicate the rehabilitation outcome attained, do not accurately represent PWP's reality for community reintegration and occupational adaptation to their disability. Clinicians are required to place individuals on the Landrum outcome level based on their in hospital functioning at that specific moment, rather than their potential to deal with the reality of their occupational life within their contextual environment and their physical, psychosocial and occupational adaptation required to support HROL and changes in their approach to life that are needed to live successfully with a disability which in itself is a longer term process. This would help to accurately determine the PWP's future rehabilitation needs. Moreover, it is now apparent that the in- patient rehabilitation hospital is only the starting point in the rehabilitation of PWP, there is an

indispensable need for community occupational therapy service to facilitate community reintegration for PWP and also assist with any vocational rehabilitation needs that may arise during the discharge. An important first step at the community reintegration level is in assisting them to reestablish their occupational identity, occupational competence, to navigate the barriers in their environment and thus, their HRQoL. Although the majority of the participants reported good social support, as part of the community reintegration, the community occupational therapist services would be crucial in equipping the caregivers with more information and skills on how to further support and provide care for PWP that enables independence and role accomplishment.

The results indicate that TRH's existing vocational rehabilitation service is ineffective. The majority of participants received vocational rehabilitation services during their in-patient rehabilitation, however the majority of them did not RTW. Furthermore, TRH provides no skill training to help PWP gain appropriate skills for employment nor engagement with the employer about possible accommodations or alternatives as per the country's labour legislation. It is agreed that unemployment is a national crisis; still the vocational rehabilitation given at TRH is ineffective in assisting PWPs in re-establishing their occupational identity and competence in their worker role through improving their work participation

The study showed that re-establishing one's occupational identity and competence is a gradual process that considers an individual's whole well-being. As such, it should be acknowledged when PWP still have hopes for walking again regardless of the nature of their condition and being given factual information to facilitate insight. This is so because the recovery and grieving process demands that they should have such anchoring hopes. Therefore, the clinicians should acknowledge and work parallel to the PWP grieving stages. At times, PWP may occasionally reject rehabilitation programs that reinforce the notion that they are now living with a disability and instead seek out treatments that would increase their chances of being able to walk again. Even in that, to facilitate the reestablishment thereof, clinicians would have to acknowledge the PWP needs while they are educating them to make informed decisions about their health.

Therefore, in-patient rehabilitation is only the starting point in negotiating the PWP reestablishment of occupational identity and occupational competence. This continues to the community whereby the community occupational therapist must take a holistic approach to the PWSCI and thoroughly examine every facet of their occupational environment to identify any barrier thereto. Moreover, the occupational therapist can also play an advocacy role as we understand the overall needs of PWP, this would be to ensure that PWP realise their human rights.

6.4 Future research

- It is recommended that this study be conducted with a larger sample size to allow for a better representation of the population and ensure that the results can be generalised among the population of PWP.
- It is recommended that surveys, rather than longer semi- structured interviews, be used to reach a wider population. These surveys should be precise enough to provide the same rich and in-depth information that a researcher would get from an interview.
- It is recommended that this study be conducted after at least 5 years post SCI rehabilitation to explore if by then PWP would have re- established their occupational identities, occupational competences and whether they would have managed to find their way around their occupational setting. To also find out whether their HRQoL would have improved in all dimensions.
- It is recommended that a longitudinal qualitative study is conducted to explore occupational identity and occupational competences of PWP in depth and overtime.
- Explore the efficacy and cost-effectiveness of the current occupational therapy programs within rehabilitation hospitals and in the community to ensure achievement of occupational adaptation following a SCI.

6.5 Conclusion

This chapter concluded the research study and provided information on how this study would inform the occupational therapy profession, both in the research field and practice. The recommendations as to the future research were also provided. Thus, since the in- patient rehabilitation occupational therapist cannot work in the community, the right Landrum outcome level report and a through down- referral are emphasised so the community occupational therapist may continue to see the PWP, facilitate their community integration and thus, assist them to reestablish their occupational identity and occupational competence.

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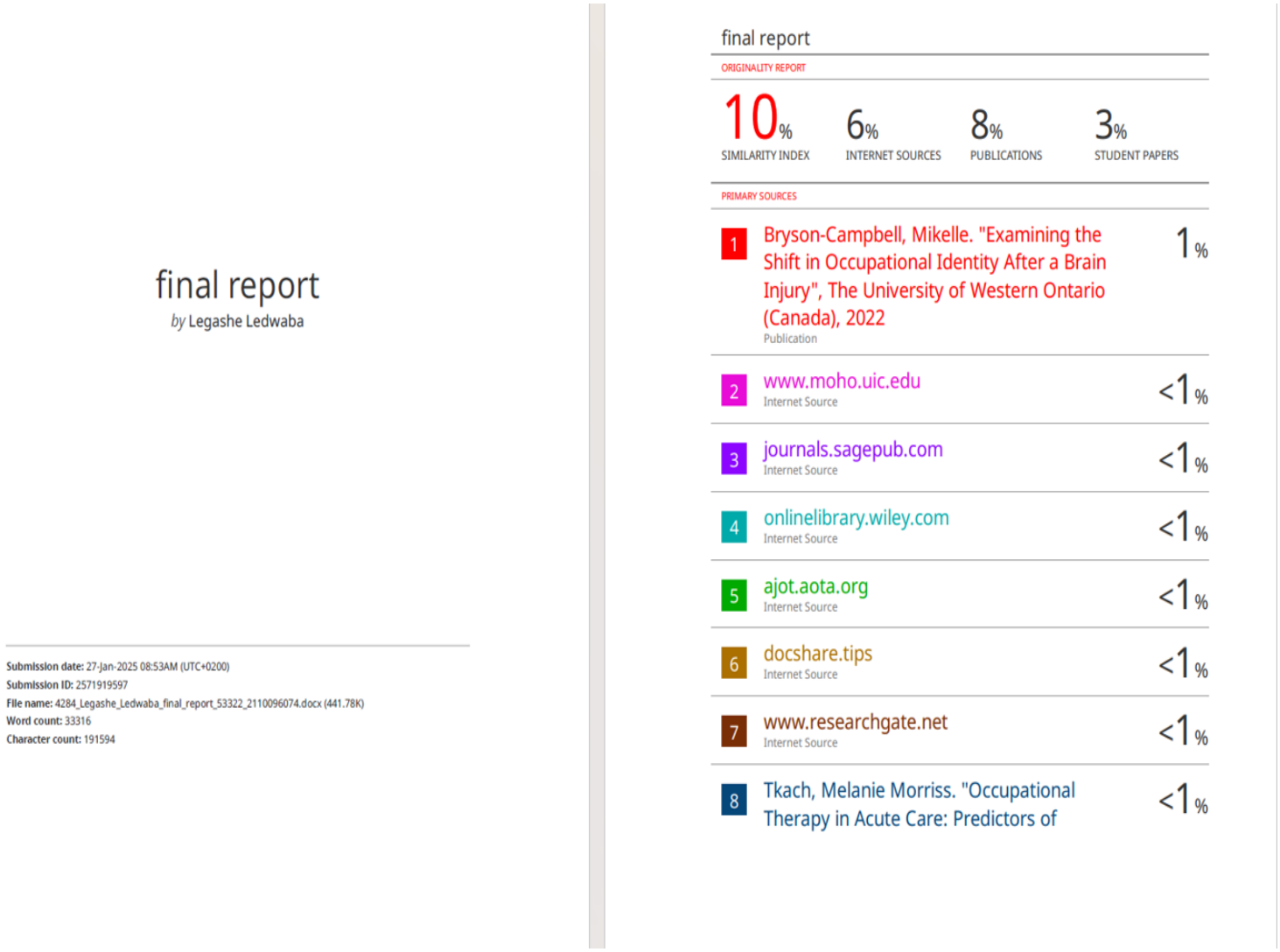
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Appendix A Turnitin report



final report

by Legashe Ledwaba

Submission date: 27-Jan-2025 08:53AM (UTC+0200)
Submission ID: 2571919597
File name: 4284_Legashe_Ledwaba_final_report_53322_2110096074.docx (441.78K)
Word count: 33316
Character count: 191594

final report

ORIGINALITY REPORT

10%	6%	8%	3%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	Bryson-Campbell, Mikelle. "Examining the Shift in Occupational Identity After a Brain Injury", The University of Western Ontario (Canada), 2022 Publication	1%
2	www.moho.uic.edu Internet Source	<1%
3	journals.sagepub.com Internet Source	<1%
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8	Tkach, Melanie Morriss. "Occupational Therapy in Acute Care: Predictors of	<1%

Appendix B Plagiarism declaration form

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

FACULTY OF HEALTH SCIENCES

PLAGIARISM DECLARATION TO BE SIGNED BY ALL HIGHER DEGREE STUDENTS

SENATE PLAGIARISM POLICY: APPENDIX ONE

I Legashe Hezekiel Ledwaba (Student number: 698467) am a student registered for the degree of MSc Occupational Therapy in the academic year 2025.

I hereby declare the following:

- I am aware that plagiarism (the use of someone else's work without their permission and/or without acknowledging the original source) is wrong.
- I confirm that the work submitted for assessment for the above degree is my own unaided work except where I have explicitly indicated otherwise.
- I have followed the required conventions in referencing the thoughts and ideas of others.
- I understand that the University of the Witwatersrand may take disciplinary action against me if there is a belief that this is not my own unaided work or that I have failed to acknowledge the source of the ideas or words in my writing.
- I have included as an appendix a report from "Turnitin" (or other approved plagiarism detection) software indicating the level of plagiarism in my research document.

Signature:  Date: 29 May 2025

Appendix C Outcome Levels According to Landrum, Schmidt and Mclean (1995)

OUTCOME LEVEL	DESCRIPTION OF OUTCOME LEVELS
Level 0: Physiological instability	Usually occurs early after onset in an acute setting. Assessment, diagnosis, and management of medical conditions are ongoing. Includes unmanaged medical problems presenting at a later stage e.g. pressure sores/ inadequate bladder management.
Level 1: Physiological stability	Medical problems addressed and appropriately managed. Condition is stable- no longer requires an acute care setting.
Level 2: Physiological Maintenance	Management plans in place to ensure ongoing maintenance of skin integrity, nutrition, range of movement and bowel and bladder care. Basic functional goals at this stage may include bed mobility, self-care, and communication.
Level 3: Residential re-integration	Safe function at home. Includes: self-care, mobility around home, effective communication, simple housekeeping, household planning and home management
Level 4- Community re-integration	Subject functions appropriately in the community. Includes: self-management, self-directed care of health, ability to function socially, community mobility, recreational activities, community activities, complex home management, financial management and safety in the community.
Level 5- Return to productive activity	Productive activities within the patients' level of ability. Includes paid work, unpaid work, volunteer work, and education/ training.

Appendix D OPHI II

The Occupational Performance History Interview II (OPHI II): Semi- structured interview

1. Occupational Roles

. Tell me a little about yourself.

If not working nor a student, ignore b), c), e) and move to f).

b. How did you come to have your current job? Did you study or trained for it?

b. What kind of responsibilities do you have as part of your job or studies?

b. What is the main reason that you do this?

b. What kind of a worker or student would you say you are? You may give me an example of something that shows how this is so.

b. Have you worked or studied in the past?

b. How did you choose that line of work or study?

b. How much energy or time did your work/study take?

b. Was your work or studies difficult for you?

b. What would you say is the main thing you got out of your work or studies?

b. How did the work/studies end?

b. How did the injury/disability affect your work?

If never worked before, ignore a)- l).

. Why do you think that you have not worked?

. What about your past student experiences?

. How far did you go with school?

. Home maintenance role: Do you live in an apartment or home?

. Who else do you live with?

. What kind of responsibilities do you have to maintain your apartment/home/place where you stay?

. In addition to your studies or work is there anything that takes up a lot of your energy and that is important to you? **Or** Is there anything special that you do a lot?

. Religious/ Organisational Participation: Do you actively participate in any organisation or in a church/religious group? Yes/ No

. When did you become a member?

. What do you specifically do?

. Is it for fun or is it serious?

2. Daily Routine

. Describe your typical day during the week.

. Why are you saying this is your routine?

. Is the weekend any different? If yes, describe it.

. Are you satisfied with this routine?

If Yes: What do you like about it?

If no: What do you dislike about it?

e. If you are having a really good day or really bad day, what would that day look like?

e. What are the most important things in your routine?

e. Are there other things you would like to include in your daily routine, but you are not able to?

e. Was your routine different before the injury? *

e. How would you compare these routines (before and after?)

e. What is the most important thing to keep the same about your routine?

e. What would you like to change the most about your routine?

e. Do you have any hobbies/projects/activities that are part of your current routine? If yes, Tell me about them.

e. How long have these been part of your routine?

e. Did you have any other hobbies/ projects that were part of your routines in the past?

3. Occupational Setting (Environment).

. Tell me more about your home (who do you live with and how are your related to each other)

. How do you get along/How is the overall relationship with family/those you stay with?

. What kind of things do you do together?

. If you need help with anything, can you expect your family/roommate etc. to give you a hand? Yes/No. Elaborate

. Is your home/apartment comfortable? Yes/ No. Elaborate

. Do you have enough privacy? Yes/ No. Elaborate

. Do you have enough space to move around? Yes/ No. Elaborate

. Are you ever bored there? Yes/ No. Elaborate.

. Do you like your surroundings? Yes/ No. Elaborate.

. Do you have any chores you are assisting with at home? Yes/ No. If yes, what are they?

Major Productive Roles

. Tell me about the place where you work/study.

. How do you get to work from your home (Distance, Mode of transport)?

. Is it well suited for you to get your work done (Wheelchair friendly, working station adapted)? Yes/No. Elaborate

. Do you have enough privacy? Yes/No. Elaborate

. Are you ever bored at work? Yes/No. Elaborate.

. Are you ever stressed? Yes/ No. Elaborate.

. How would you describe things at work? (Loving, fighting, supportive, stressful, busy, boring etc).

. How do you get along with your colleagues/ fellow students?

. If you need help with something, can you expect/ask your colleagues/ fellow students to give you a hand? Yes/No. Elaborate.

. If you are feeling depressed or upset, could you expect your boss or colleague to give you advice or support? Yes/No. Elaborate.

Leisure

. What are the main things you do to relax, recreate, or have fun?

. Where do you go for that?

. Do you like the facility/atmosphere?

. Do they suit you well?

Do you have people you relax/recreate with most?

e. Tell me about something you did recently that would show me what kind of atmosphere you are in when you relax or recreate.

e. Did your way of having fun or relaxing changed because of the injury? Yes/No. Elaborate

4. Activity/Occupational Choice

. How did you come to have your current job?

. Did you get this job before or after the injury?

. Are you able to fulfil your job demands effectively?

. Do you get to do the things that are important to you? Yes/No. Elaborate

. What are those things that you want to do or that are valuable to you, and you are not able to do? Can you give an example of the recent situation.

. Have you been able to choose the things in your life that are important to you? Elaborate.

. Is there anything that routinely interferes with what you want to do?

. Do you feel you have enough time to do the things you enjoy? Yes/No.

If yes, what are you likely to spend time doing?

If No, what takes much of your time doing?

i. Do you set goals for the future? Yes/No

If yes, are you able to follow through?

If No, can you give me the time you set a goal and you were not able to follow through with it?

j. What is it that you are not looking forward to accomplishing?

k. When you run into an obstacle or difficulties how do you handle it?

l. What do you think is the biggest obstacle you are facing now?

m. Do you think you have adjusted well after the injury and receiving rehabilitation?

n. Can you give an example of some of the decisions you have already made to demonstrate how well you have adjusted?

5. Critical Life Events

. Date of the SCI: _____

. How have things changed after the injury?

. What has changed since then?

. Is there any other critical event or experience that happened after the injury that occurred and further changed your life?

. What changed since the last event or experience mentioned above?

. If you think of your life, what do you consider the time you were doing your best?

. Tell me more about this period.

. What made it so good?

. What was it with your behaviour or abilities that made this so good?

. What do you consider your biggest success in life?

. What do you consider to be your worst period in your life?

. Tell me about this period.

. What do you consider your biggest failure in life?

. If you could make your future turn out as wanted, what would you be doing?

Appendix E EQ-5D-3L. Permission to use the survey grated with registration number 56761

English version

By placing a tick in one box in each group below, please indicate which statements best describe your own health state today.

Mobility

I have no problems in walking about ❑
I have some problems in walking about ❑
I am confined to bed ❑

Self-Care

I have no problems with self-care ❑
I have some problems washing or dressing myself ❑
I am unable to wash or dress myself ❑

Usual Activities *(e.g. work, study, housework, family or leisure activities)*

I have no problems with performing my usual activities ❑
I have some problems with performing my usual activities ❑
I am unable to perform my usual activities ❑

Pain / Discomfort

I have no pain or discomfort ❑
I have moderate pain or discomfort ❑
I have extreme pain or discomfort ❑

Anxiety / Depression

I am not anxious or depressed ❑
I am moderately anxious or depressed ❑
I am extremely anxious or depressed ❑

Sample

UK (English) © 1990 EuroQol Group EQ-5D™ is a trade mark of the EuroQol Group

Isizulu version

Participant Code:

Ngokufaka uphawu ebukhosini elilodwa kulelo nalelo qoqo elingezansi, sicela ukhombise ukuthi yisiphi isitatimende esichaza kahle kakhulu isimo sempilo yakho namhlanje.

Ukuhamba / ukunyakaza

Anginazinkinga ukuzihambahambela ❑

Nginezinkinga ezithile ukuzihambahambela ❑

Ngihlala ngisembhedeni ❑

Ukuzinakekela

Anginazinkinga ngokuzinakekela ❑

Nginezinkinga ezithile zokuzigeza noma ukuzigqokisa ❑

Angikwazi ukuzigeza noma ukuzigqokisa ❑

Izinto ezijwayelekile *(isibonelo: ukusebenza, ukutadisha, umsebenzi wasendlini, izinto zomndeni noma zokungcebeleka)*

Anginazinkinga ukwenza izinto zami ezijwayelekile ❑

Nginezinkinga ezithile ukwenza izinto zami ezijwayelekile ❑

Angikwazi ukwenza izinto zami ezijwayelekile ❑

Izinhlungu / ukungaphatheki kahle

Anginazinhlungu noma ukungaphatheki kahle ❑

Nginezinhlungu noma ukungaphatheki kahle okulingene nje ❑

Nginezinhlungu noma ukungaphatheki kahle okwedlulele ❑

Ixhala / ukudangala

Anginalo ixhala noma ukudangala ❑

Nginexhala noma ukudangala okulingene nje ❑

Nginexhala noma ukudangala ngokweqile ❑

Appendix F Approved Participant information sheet

STUDY INFORMATION DOCUMENT

OCCUPATIONAL IDENTITY, OCCUPATIONAL COMPETENCE AND OCCUPATIONAL SETTING AND THEIR IMPACT ON QUALITY OF LIFE AMONG PEOPLE WITH PARAPLEGIA POST SPINAL CORD INJURY REHABILITATION.

Greeting

I am Legashe Ledwaba, and I am doing research titled: OCCUPATIONAL IDENTITY, OCCUPATIONAL COMPETENCE AND OCCUPATIONAL SETTING THEIR IMPACT ON QUALITY OF LIFE AMONG PEOPLE WITH PARAPLEGIA POST SPINAL CORD INJURY REHABILITATION. Through this research, I would like to find out whether after suffering spinal cord injury and being rehabilitated you are able: to do activities you were able to do before the injury; managed to continue with employment after the injury or not; to go to places where you were able to go to/visit; to fulfil the roles you had/have; to maintain relationships you had/have. This will be done by first looking at all the activities you used to do before the spinal cord injury, and it will be followed by looking at the current activities you are doing. I am aware that a lot has changed since the injury, so it is through this research that I want to understand these changes on a deeper level and determine if these changes impact your quality of life.

The results of this research will help improve rehabilitation provided to the new patients with spinal cord injuries as we will now be more aware of what life looks like after rehabilitation from your experience. You would have provided such knowledge as illustrated above.

I invite you to participate in this research by filling a questionnaire and by participating in the interview with me. This may take about 90 minutes of your time. The interview and the filling of the questionnaire will be done at the place of your choice, your home (preferably) or during your visit for follow- ups at Tshwane Rehabilitation Hospital. You will also be required to fill a demographic questionnaire and most of the information for the demographic questionnaire will be found in your medical records at Tshwane Rehabilitation Hospital.

Please note that you will not benefit directly from the research, but your contribution will help to improve rehabilitation for the future spinal cord injured patients. The research will also improve our knowledge as to whether your abilities to do your daily activities impact your quality of life.

The results of this study will be made available to you once the study is complete. Please note that participation is voluntary and there is absolutely no pressure on you to take part in the

study. You will also be allowed to withdraw if you are uncomfortable or unhappy without any consequences. Furthermore, note that all documents will be kept confidential and under password protected conditions. No answers or personal information will be disclosed to anyone other than the researchers.

If you would like to ask any further information or questions, please feel free to contact me on the contact details mentioned below. If you have any concern over the way the study is being conducted, please contact the Chairperson of this Committee who is Dr Clement Penny, who may be contacted on telephone number 011 717 2301, or by e-mail on Clement.Penny@wits.ac.za. The telephone numbers for the Committee secretariat are 011 717 2700/1234 and the e-mail addresses are Zanele.Ndlovu@wits.ac.za and Rhulani.Mukansi@wits.ac.za

Legashe Ledwaba: 0737386512

:legashe@gmail.com



Your participation will be highly appreciated.

Date: 15 June 2023.

Appendix G Informed consent form



PARTICIPANT CONSENT SHEET

OCCUPATIONAL IDENTITY, OCCUPATIONAL COMPETENCE, OCCUPATIONAL SETTING AND THEIR IMPACT ON QUALITY OF LIFE AMONG PEOPLE WITH PARAPLEGIA POST SPINAL CORD INJURY REHABILITATION.

1. I have been given a Participant Information Sheet which explains the nature and processes involved in this study, which is attached hereto.

2. I was given time to read it, or had it read and explained to me, in the language I best understand.

3. I was given time to ask any questions I wanted to and found any answers given to me to be reasonable and satisfactory.

4. I believe I fully understand why the study is being conducted and what the intended outcomes will be.

5. I understand that there will be no immediate benefit to me, should I agree to participate, nor will I receive any payment; conversely, participation will not cost me anything but my time.

6. I understand that, even if I initially consent to take part in the study, I may subsequently withdraw at any time and would not be required to give any reasons; if that happened, any data collected about me for the purposes of the study would immediately be destroyed, unless I give consent for it to be retained.

7. I have been given a range of contact details, listed below. If I require further information or become concerned about any aspect of this study, I am free to speak to any of these contacts.

Contact details:

Legashe Ledwaba, Principal investigator, Cell number: 0737386512, e-mail: legashe@gmail.com

Prof P De Witt, Supervisor, Telephone no: 082 8541470, e-mail: Patricia.dewitt@wits.ac.za

Professor CB Penny, Chairperson of the Human Research Ethics Committee (Medical) at the University of Witwatersrand, on telephone no. 011 717 2301, or by e-mail at Clement.Penny@wits.ac.za. Ms. Z Ndlovu or Mr Rhulani Mkansi, Committee Secretariat,

telephone nos.: 011 717 2700 or 1234, or by e-mail at: Zanele.Ndlovu@wits.ac.za or Rhulani.Mkansi@wits.ac.za

Name of Participant: _____

Date: _____

Place: _____

Signature or mark _____

Witnessed by:

Name of Witness: _____

Signature: _____

Date: _____

Appendix H Consent form to obtain medical records

CONSENT FORM FOR ACCESSING MEDICAL RECORDS OF STUDY PARTICIPANT

OCCUPATIONAL IDENTITY, OCCUPATIONAL COMPETENCE, OCCUPATIONAL SETTING AND THEIR IMPACT ON QUALITY OF LIFE AMONG PEOPLE WITH PARAPLEGIA POST SPINAL CORD INJURY REHABILITATION.

1. I hereby consent for the researcher to access my medical record to supplement the required details of my medical history pertinent to this study.

2. I understand that:

- Only the medical information that is pertinent to this study will be collected.
- The information will only be used in the context of this study.
- The information will be anonymized so that my identity is confidential.
- The information will be stored safely according to the university research security protocol.
- The information obtained from my medical records will be erased within either (a) two (2) years of the publication of the research findings, or (b) six (6) years, if no publications arise from this research.
- Anyone wishing to access this information in the future will first have to obtain the approval of the Human Research Ethics Committee (Medical) of the University of the Witwatersrand, Johannesburg.

Contact details:

Legashe Ledwaba, Principal investigator, Cell number: 0737386512, e-mail: legashe@gmail.com

Prof P De Witt, Supervisor, Telephone no: 082 8541470, e-mail: Patricia.dewitt@wits.ac.za

If you have any concern over the way the study is being concocted, please contact the chairperson of this Committee who is Professor Paul Ruff, Chairperson of the Human Research Ethics Committee (Medical) at the University of Witwatersrand, who may be contacted via any one member of the secretariat. The telephone numbers for the Committee secretariat are . 011 717 2700/1234/2656/1252 and the email addresses are Zanele.Ndlovu@wits.ac.za, Rhulani.Mkansi@wits.ac.za, Mapula.Ramaila@wits.ac.za and Ian.Burns@wits.ac.za.

Name of Participant: _____

Date: _____

Place: _____

Signature or mark _____

Witnessed by:

Name of Witness: _____

Signature: _____

Date: _____

Appendix I Consent Sheet for Audio Recording of study participants



Consent Sheet for Audio Recording of Study Participation

OCCUPATIONAL IDENTITY AND OCCUPATIONAL COMPETENCE AND THEIR IMPACT ON QUALITY OF LIFE AMONG PEOPLE WITH PARAPLEGIA POST SPINAL CORD INJURY REHABILITATION.

I hereby consent to audio recording of the interview as it was described in the participant information sheet of this study.

I understand that:

- The recording will be stored in a secure and password protected computer with restricted access to the researcher and the research supervisor.
- The recording will be transcribed and any information that could identify me will be removed.
- The recordings will be erased within either (a) two (2) years of the publication of the research findings, or (b) six (6) years, if no publications arise from this research
- Anyone wishing to access this information in the future will first have to obtain the approval of the Human Research Ethics Committee (Medical) of the University of the Witwatersrand, Johannesburg.
- Direct quotes from my interview, without any information that could identify me, may be cited in the research report or other write-ups of research.

Contact details:

Legashe Ledwaba, Principal investigator, Cell number: 0737386512, e-mail: legashe@gmail.com

Prof P De Witt, Supervisor, Telephone no: 082 8541470, e-mail: Patricia.dewitt@wits.ac.za

If you have any concern over the way the study is being concocted, please contact the chairperson of this Committee who is Professor Paul Ruff, Chairperson of the Human Research Ethics Committee (Medical) at the University of Witwatersrand, who may be contacted via any one member of the secretariat. The telephone numbers for the Committee secretariat are . 011 717 2700/1234/2656/1252 and the email addresses are Zanele.Ndlovu@wits.ac.za, Rhulani.Mkansi@wits.ac.za, Mapula.Ramaila@wits.ac.za and Ian.Burns@wits.ac.za.

Name of Participant: _____

Date: _____

Place: _____

Signature or mark _____

-

Witnessed by:

Name of Witness: _____

Signature: _____

Date: _____

Appendix J Demographic Questionnaire

Participant code: **DEMOGRAPHIC QUESTIONNAIRE**

Date of discharge:_____ Date of Injury:_____

Age:_____ Gender:_____

Diagnosis:_____ Cause of the Injury:_____

Co- Morbidities:_____

Level of outcome at discharge:_____

_____

Wheelchair discharged with:_____

Occupation Prior Injury:_____

Received Vocational Rehabilitation if employed prior injury? Yes/ No

Mode of transport:_____

Current Occupation:_____

Education level:_____

Receiving Disability Grant? Yes/ No.

Family Structure:_____

_____

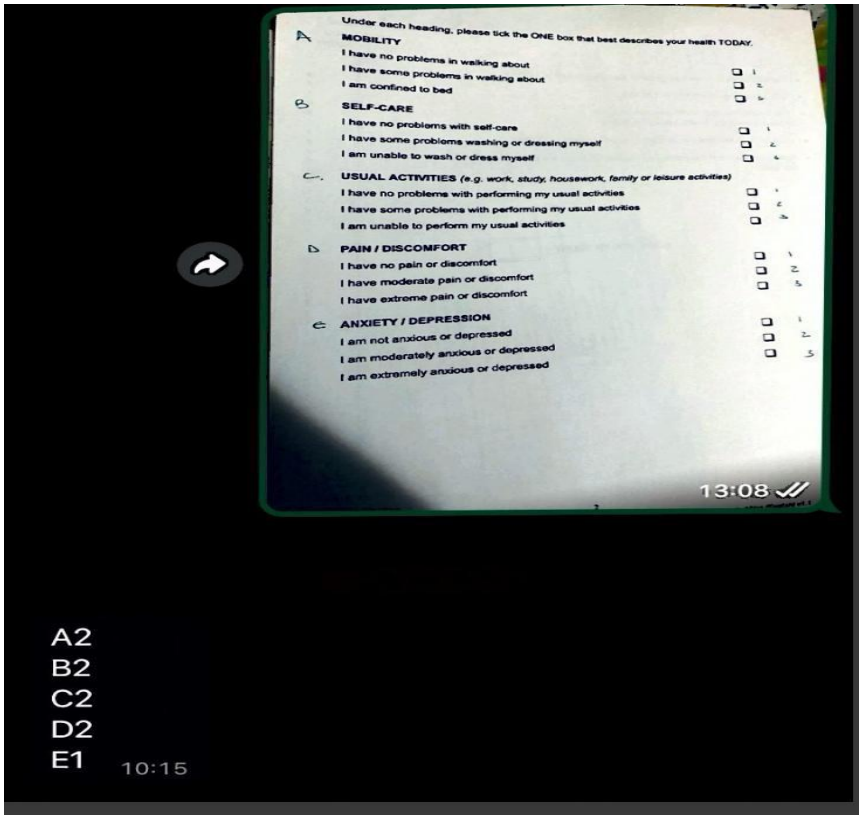
_____

Electricity Available: Yes/No

Running Water Available: Yes/No

Recreational Centres Available: Yes/ No

Appendix K WhatsApp excerpt



Appendix L Wits HREC Ethical clearance letter

UNIVERSITY OF THE WITWATERSRAND JOHANNESBURG

R49 Mr L Ledwaba

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)
CLEARANCE CERTIFICATE NO. M231107

NAME: Mr L Ledwaba **DEGREE:** MSc (OT)
(Principal and Co-Investigators)

DEPARTMENT: School of Therpeutic Sciences
Department of Occupational Therapy
Medical School
University

PROJECT TITLE: *Occupational identity and occupational competence and their impact on quality of life amongst people with paraplegia, post spinal cord injury rehabilitation*

DATE CONSIDERED: 24-Nov-2023

DECISION: Approved unconditionally

CONDITIONS:

NOTE: If contact information regarding student study participants is required, please contact the Registrar's office <Nicoleen.Potgieter@wits.ac.za>

SUPERVISOR: Professor P de Witt

APPROVED BY:
Professor P Ruff, Chairperson, HREC (Medical)

DATE OF APPROVAL: 6 March 2024 **EXPIRY DATE:** 5 March 2029

This Clearance Certificate is valid for 5 years from the date of approval. An extension may be applied for.

DECLARATION OF INVESTIGATORS

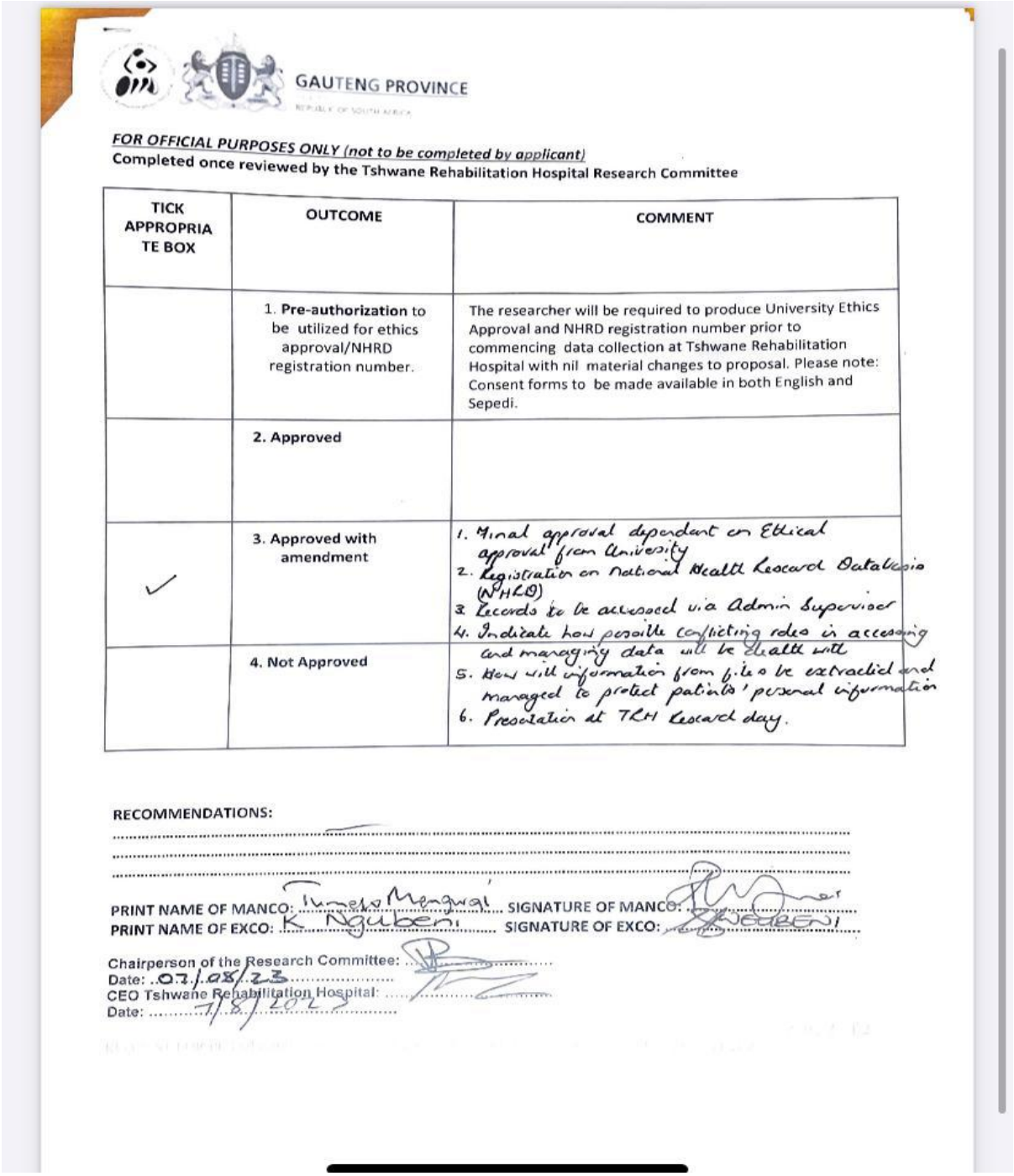
To be completed in duplicate and **ONE COPY** returned to the Research Office secretariat on the 3rd floor, Phillip Tobias Building, Parktown, University of the Witwatersrand, Johannesburg.

I/we fully understand the conditions under which I am/we are authorized to carry out the above-mentioned research and I/we undertake to ensure compliance with these conditions. Should any departure be contemplated from the research protocol as approved, I/we undertake to submit details to the Committee. **I agree to submit a yearly progress report** in the format available at https://wits.ac.za/research/researcher-support/research-ethics/ethics-committees/. This report is due annually, for the duration of the Clearance Certificate, beginning on the first anniversary of Date of Approval above. Unreported changes to the study may invalidate the clearance given by the HREC (Medical).

Signature of Principal Investigator

08 March 2024
Date

Appendix M Tshwane Rehabilitation approval to conduct a study letter



GAUTENG PROVINCE

FOR OFFICIAL PURPOSES ONLY (not to be completed by applicant)
Completed once reviewed by the Tshwane Rehabilitation Hospital Research Committee

TICK APPROPRIATE BOX	OUTCOME	COMMENT
	1. **Pre-authorization** to be utilized for ethics approval/NHRD registration number.	The researcher will be required to produce University Ethics Approval and NHRD registration number prior to commencing data collection at Tshwane Rehabilitation Hospital with nil material changes to proposal. Please note: Consent forms to be made available in both English and Sepedi.
	2. Approved	
✓	3. Approved with amendment	1. Final approval dependant on Ethical approval from University 2. Registration on National Health Research Database (NHRD) 3. Records to be accessed via Admin Supervisor 4. Indicate how possible conflicting roles in accessing and managing data will be dealth with 5. How will information from files be extracted and managed to protect patients' personal information 6. Presentation at TRH Research day.
	4. Not Approved	

RECOMMENDATIONS:
.....
.....
.....

PRINT NAME OF MANCO: Tumelo Mengwai SIGNATURE OF MANCO: .....
PRINT NAME OF EXCO: K Ngubeni SIGNATURE OF EXCO: .....

Chairperson of the Research Committee: .....
Date: 07/08/23
CEO Tshwane Rehabilitation Hospital: .....
Date: 7/8/2023

Appendix N Tshwane Rehabilitation Hospital Psychology acceptance letter

GAUTENG PROVINCE
HEALTH
REPUBLIC OF SOUTH AFRICA

Tshwane Rehabilitation Hospital
Occupational Therapy Department
012 354 6691

Request for Psychological intervention.

Dear Madam

I am Legashe H Ledwaba, Occupational therapist here at Tshwane Rehab Hospital. I am currently registered at University of Witwatersrand for the Master of Sciences in Occupational Therapy degree. As part of the program, I am conducting a study titled: Occupational identity and occupational competence and their impact on quality of life among people with paraplegia post spinal cord injury rehabilitation. One of the possible risks, of the study, to the prospective participants is psychological distress that may be invoked or elicited by the interview that would be conducted during the data collection; the distress may be in the form of having the deeply embedded issues caused by the spinal cord injuries suffered being brought up/out. To mitigate this, the participants may need psychological intervention to deal with these distresses.

If there should be any of the prospective participants experiencing this distress, I hereby request that you offer psychological intervention as you may deem appropriate. I would fill up the referring forms as prescribed by the hospital (Tshwane Rehabilitation hospital).

Your professional assistance and expertise would be highly appreciated.

Kind regards
Legashe H Ledwaba

Date: 18 January 2024

M. Sikhonde
Head of Clinical Psychology Department
Tshwane Rehabilitation Hospital

Date: 19/01/2024

REQUEST: APPROVED/~~NOT APPROVED~~

GAUTENG PROVINCIAL GOVERNMENT
DEPARTMENT OF HEALTH
REHABILITATION SERVICES
2024 -01- 19
Signature .....
TSHWANE REHABILITATION HOSPITAL
CNR DR SAVAGE & SOUTPANSBERG ROADS
PRETORIA