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DISCIPLINE IN OCCUPATIONAL THERAPY

**The factors influencing the return to work of
individuals having sustained severe traumatic brain
injuries in South Africa**

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DECLARATION

This research has not been previously accepted for any degree and is not being currently considered for any other degree at any other university.

I declare that this dissertation contains my own work except where specifically acknowledged

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Signed.....

Date.....

DEDICATION

First and foremost, this is dedicated to my husband Chris who's endless support allowed me to follow my dreams. To my children Cole and Hayden, may this be a guiding light to give voice to those who may not have the privilege to do so. To my mom, "The Boys" and "My Guys". Thank you for working with me and through me. Without you, I would not be where I am today.

And to Julia. Through your unwavering belief in life, you showed me that you can overcome anything. Thank you for having a voice to give.

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LIST OF ACRONYMS

TBI	-	Traumatic Brain Injury
sTBI	-	Severe Traumatic Brain Injury
GCS	-	Glasgow Coma Scale
RTW	-	Return to work
PWD's	-	People with disabilities
VR	-	Vocational Rehabilitation
NIOH	-	National Institute for Occupational Health
PHC	-	Private Health Care

LIST OF DEFINITIONS

Important definitions that will be used within this study are described and understood by the researcher below. These are listed alphabetically.

Area of daily living

Derived from the term activities of daily living (ADL's) as being a life task required for self-care and self-maintenance (Kielhofner, 2008)

Emotional and behavioural dyscontrol

Emotional dyscontrol refers to pathologic laughing and crying, affective lability, and irritability. Behavioural dyscontrol refers to disinhibition and aggression (Arciniegas & Wortzel, 2014)

Environmental factors

Defined as the physical and social features of the context in which an individual does something, that impacts on what one does and how it is done. This can include the role of culture, physical spaces and objects, the social environment and occupational settings (Kielhofner, 2008).

Glasgow Coma Scale

A 15-point scale used to determine the level of consciousness of an individual who has sustained a head injury. With 15/15 considered normal, mild TBI falls within a GCS of 12 – 15 while moderate TBI ranges from 9 – 12. A severe TBI ranges from 1 – 8 on the GCS (Teasdale et al., 2014).

Habits of routines

The influence of one's habits are found in our daily routines and use of time that assist in knowing where we are in the stream of time. They assist in creating a pattern by which we engage in various occupations (Kielhofner, 2008).

Habituation

Semiautonomous pattern of behaviour within a familiar temporal, physical and social environment (Kielhofner, 2008)

Occupation

The doing of work, play or activities of daily living within a temporal, physical and sociocultural context that characterises much of human life (Kielhofner, 2008)

Performance skills

Derived from the term Performance Capacity as the ability to perform an act based on the status of one's mental and physical capabilities, as well as lived experience (Kielhofner, 1995)

Self-efficacy

The individual's conviction that one has the ability to successfully perform a certain behaviour or achieve a desired outcome (Bandura, 1977)

Return to work

A complex process involving reintegration into the work environment, staying at work and long-term evolution at work (Fort, E., Bouffard, E., Charnay, P., Bernard, M., Boisson, D., Laumon, B., & Hours, M. 2011)

Self-worth

The outcomes on which a person has staked his or her self-esteem, so that person's view of his or her value or worth depends on perceived successes or failures or adherence to self-standards in that domain (Crocker & Wolfe, 2001)

Stable and secure work environment – this is derived from the terms Job stability and Job security

- **Job Stability** is the duration of jobs or the probability of retaining or leaving a job (Neumark, 2000)
- **Job security** is preserving the identical job a person has. This would mean a guarantee that the person could continue to perform the same job for the same pay with the same organisation as he or she had been doing in the past (Meltz, 1989)

Considering the above, a stable and secure work environment can be explained as the ability to perform job demands as done in the past, with no foreseen changes to one's participation in the work environment.

Vocational rehabilitation

Rehabilitation that helps someone with a health problem stay at, return to and remain in work (Waddell, Burton, & Kendall, 2008)

Worker Role

Performance in activities both paid and unpaid, that provide services to others (Kielhofner, 2008)

ABSTRACT

A traumatic brain injury (TBI) is a complex phenomenon where the ability to return to work (RTW) following injury is not always successful. Vocational rehabilitation (VR) is process that facilitates the RTW. Previous skills, habits and a familiar working environment need to be considered to ensure a successful client-centred intervention. The purpose of this study was to identify and explore factors influencing RTW of severe TBI's who were employed in a stable, secure environment for more than three years prior to the injury.

A qualitative approach was used to explore the lived experience of severe TBI's. The aims and objectives were to identify and explore personal attributes, developed habits and routines, residual performance skills and environmental factors that enhanced or impeded the RTW of severe TBI's. A semi-structured interview was guided by the worker role questionnaire and used as a gathering tool. The audio-taped interviews were transcribed and then thematically analysed using Braun and Clark's six phase process.

Two major themes emerged from the study namely; "*It's all about me*" and *The support for me*". The sub-themes from the first theme included *my role as a worker*, *my abilities in the role* and *my emotions in the role*. Sub-themes from the second theme included *personal*, *work* and *rehabilitative support*.

The findings indicate that participating in work was of great importance to participants. Factors that enhanced the RTW were; developing and fulfilling the worker role, positive support, the ability to draw on past experience, knowledge and skills and VR intervention. Additionally, a previous stable and secure work environment emerged as a strong factor in enhancing RTW. Factors that impeded the RTW were a lack of support and uncertainty regarding residual abilities and the working environment. It highlighted that these factors were unique, inter-related and crucial in the fulfilment of self-worth.

Although only two participants in this study received VR, there was strong emphasis on its impact on RTW and the need for this to be client-centred. This finding supports literature indicating VR in South Africa is limited. If readily available, it could have a positive effect on RTW of people with severe TBI's.

CHAPTER 1

INTRODUCTION, LITERATURE REVIEW AND METHODOLOGY

1.1 INTRODUCTION

Surviving a traumatic brain injury (TBI) often accompanies varying levels of impairments in physical, cognitive, psychosocial and functional skills and may influence an individual's participation in occupation, including work. Most individuals who have sustained a TBI are of working age (van Velzen, van Bennekom, Edelaar, Sluiter, & Frings-Dresen, 2009) and sustaining a TBI inevitably leads to time off from work and loss of the worker role. Individuals with mild and moderate TBI's manage to have some degree of return to work (RTW) however large scale marginalisation is often experienced with severe TBI individuals. Japp (2005) noted that the majority of moderately or severely injured individuals do not RTW at the level enjoyed prior to their injury. Research shows that RTW of TBI survivors is directly influenced by the type of vocational rehabilitation (VR) received and the development of the worker role post TBI (Tyerman 2012). This chapter will review TBI, VR, worker role development and RTW with specific focus on RTW after severe TBI.

1.2 LITERATURE REVIEW

1.2.1 TRAUMATIC BRAIN INJURY IN THE SOUTH AFRICAN CONTEXT

The leading cause of death and disability is reportedly TBI and the assumption is that the more severe the injury, the more significant the disability (Basso A, 2016). According to statistics from the South African Institute for Occupational Health (NIOH), globally more than 5% of individuals suffer from a serious brain injury of which an estimated 89, 000 new cases of TBI's are reported annually in South Africa (Basso A, Previgliano I, Servadei F. 2006). Population based studies show that the incidence of TBI in the United States is between 180 and 250 per 100 000 per year. In Spain the incidence is 91 per 100 000 while the south of Australia, the incidence is 322 per 100 000. In South Africa, the incidence is 316 per 100 000 (Bruns & Hauser, 2003) indicating a high incidence of TBI in South Africa when compared to other countries.

Naidoo (2013) noted that in South Africa, there is no specific databank for TBI's. South African statistics from 2014 noted that the total deaths from "*other external causes of accidental injuries*" contributed to 60% of non-natural deaths (Statistics South Africa, 2015). Data analysed between January 2009 and December 2013 from a tertiary hospital in KwaZulu-Natal found that isolated, severe brain injuries accounted for 24 in 100 000 (Lewis C, 2015). At a provincial hospital in the Eastern Cape,

the incidence of TBI between January 2014 and January 2016 was 90 in 100 000, where 73.7% of those TBI's were in working aged individuals (Joseph SS, 2016). The prevalence and severity of TBI's at a national level in South Africa is currently unknown.

According to Watt and Penn (2000), the incidence of TBI in South Africa is reaching extremely high proportions where, between 1997 and 2002, there was a 60% increase in mortality as a result of a TBI. Considering that most of these individuals are of working age and fulfil the worker role, the incidence of TBI is resulting in more people with disabilities becoming non-productive members in society and inactive in the work place. According to Trends Analysis 2013 – 2014 (Department of Labour, 2013 – 2014) 0.9% of all PWD's were employed in the open labour market. This supports the findings from Dube (2005) in that despite comprehensive framework of labour legislation and policies addressing the protection and promotion of employment of people with disabilities (PWD's) in South Africa, inclusion into the open labour market is poor.

Identification of the factors influencing the RTW of severe TBI's will contribute towards addressing the underlying cause a poor RTW of PWD's.

1.2.2 CLASSIFICATION OF TBI AND RETURN TO WORK

The Glasgow Coma Scale (GCS) is a common measuring tool to describe the level of consciousness and severity of injury following a TBI (Teasdale et al., 2014). Using a 15-point scale, a mild TBI falls within a GCS of 12 – 15 while a moderate TBI ranges from 9 – 12. A severe TBI ranges from 2 – 8 on the GCS (Teasdale et al., 2014).

Internationally, the severity of the TBI is an accepted prognostic factor of RTW success with the more severe the injury, the less chance of successful RTW (Andelic, Stevens, Sigurdardottir, Arango-Lasprilla, & Roe, 2012; Forslund, Roe, Arango-Lasprilla, Sigurdardottir, & Andelic, 2013). International literature indicates that severe TBI's have up to a 74% less chance of RTW when compared with mild and moderate TBI's (Andelic et al., 2012; Forslund et al., 2013). There is limited South African based literature on the RTW of individuals with severe TBI. Watt and Penn (2000) reported a 56% RTW of mild, moderate and severe TBI's with only 32% of TBI's returning to competitive employment. Considering the diversity in South Africa with regards to educational levels, acquired skills, cultural and social backgrounds as well as the high percentage of unemployment following a TBI, it leaves to question whether there is a chance for severe TBI individuals to RTW.

1.2.3 SEVERE TRAUMATIC BRAIN INJURY AND RETURN TO WORK

Impairments in physical, cognitive, psychosocial and functional skills are considered immense and complex for individuals who have sustained a severe TBI and are a limitation for RTW (Grauwmeijer, Heijnenbroek-Kal, Haitsma, & Ribbers, 2012). However, participation in occupational tasks serves to improve such complex impairments.

Reduced self-awareness and emotional and behavioural dyscontrol are considered complex consequences of a severe TBI. RTW is impeded due to poor self-awareness (Kelley, 2014; Richardson, 2015; Sasse, 2013) and emotional and behavioural dyscontrol is considered to be a long term and chronic hindrance in the RTW process (Ponsford et al., 2014). Subsequently, a sense of “loss of self” was a consequence due to poor RTW (Bush, Hux, Guetterman, & McKelvey, 2016; Hooson, Coetzer, Stew, & Moore, 2013; Lundqvist & Samuelsson, 2012; Soeker, Van Rensburg, Travill, 2012b). However, participation in occupation develops self-awareness into residual impairments including emotional and behavioural control. This results in the development of confidence, a motivation to live and elements of functional recovery (Anke, 2015; Bjorkdahl, 2010; Conklin, 2015; Hooson et al., 2013; Lundqvist & Samuelsson, 2012). This highlights the importance of RTW following a severe TBI as it can be assumed that participation in occupation can lower the sense of “loss of self”.

1.2.4 VOCATIONAL REHABILITATION, THE WORKER ROLE AND RETURN TO WORK

Rehabilitation focuses on restoring function where vocational rehabilitation (VR) is directed towards such function in an occupational setting (Waddell et al., 2008). Internationally, RTW following a TBI is considered a primary rehabilitation goal (Radford et al., 2013). VR significantly impacts on the RTW process (Gilworth, Eyres, Carey, Bhakta, & Tennant, 2008) and therefore should be considered part of this primary rehabilitation goal. VR intervention not only improves self-efficacy (Bjorkdahl, 2010), but improves the relationship between the individual and the employers (Bonnetterre et al., 2013).

In South Africa, the National Rehabilitation Policy (Department of Health, 2000) was developed to provide therapeutic and client-centred rehabilitation to individuals at a primary health care (PHC) level. Where available, this type of rehabilitation is offered in the early stages of recovery and rarely considers the process of RTW (Soeker, Van Rensburg, Travill, 2012a). VR in rural and urban areas of South Africa is isolated, limited and fragmented (Coetzee, Goliath, van der Westhuizen, & Van Niekerk, 2011; Uys, Phillips, & Zulu, 1997). This may suggest that RTW at a PHC level is considered a secondary goal in the rehabilitation process in South Africa and therefore often neglected (Coetzee et al., 2011; Soeker et al., 2012b; Watt N, 2000). This is echoed by a low 0.9% employment rate of PWD's between 2013 – 2014 (Department of Labour, 2013 – 2014). In a recent survey of VR services in Gauteng's public

healthcare, it was found that there was a lack of accord regarding what VR services should be offered that a PHC level (van Biljon, Casteljiën, du Toit & Soulsby 2016). To promote VR at a PHC level, it is important to explore the perception of why VR is not being accessed by, or is unavailable to the very individuals that benefit significantly from it. In a recent study PHC clinics within Gauteng offer vocational screenings and supportive services as highly trained VR specialists with the necessary equipment and support were

By understanding the worker role and the perceived importance of role fulfilment, practitioners are enabled to “*develop, implement and monitor*” the process of RTW (Lee & Kielhofner, 2010). Therefore, rehabilitation therapists are urged to understand that work as an occupation and the role of being a worker is as important as any other area of occupation. This will facilitate the implementation of holistic, client-centred rehabilitation programmes that promote the development of VR and inevitably, the promotion of RTW following injury at a PHC level.

Pre-injury employment facilitates the RTW of TBI's (Andelic et al., 2012; Autret et al., 2015; Bjorkdahl, 2010; Cuthbert et al., 2015; Donker-Cools, Wind, & Frings-Dresen, 2015; Forslund et al., 2013; Jourdan et al., 2013; Ketchum et al., 2012). An assumption is that work as an occupation, evolves over time where volition, routines, habits and performance skills become an automatic process of occupational engagement. Occupational performance is enhanced by integrating into the routine of the workplace. This integration strengthens roles and habits that make up the worker role (Kielhofner, 1999). A minimum of three years employment in a single environment facilitates this integration and reflects a stable and secure work environment (Das & Baruah, 2013; Ferguson, 2016).

Therefore, by considering pre-injury employment, the research highlights the importance of drawing on established, skilled knowledge to enhance recovery and promote successful RTW. This will guide the VR intervention to ensure a successful RTW.

1.3 PROBLEM STATEMENT

Literature considering the TBI population and RTW in South Africa is limited and research exploring the lived experience of only severe TBI's is not available. Furthermore, literature considering the influence of a stable and secure working environment prior to injury on the RTW is unavailable when considering it solely for severe TBI's.

While there is a comprehensive framework of labour legislation in South Africa that promotes the RTW for PWD's, there is a low percentage of PWD's employed in the open labour market (Dube, 2005; Department of Labour, 2013-2014). In addition, the percentage of TBI's employed in the South African open labour market is current unknown. The researchers' personal and professional experience notes

that there is a reduced integration of TBI individuals into the workplace. This has led to question what the factors are that influence the RTW of severe TBI individuals.

VR in the South African context is offered in isolation and VR services are limited and fragmented, inhibiting the development of a service that is required for increasing employment opportunities for PWD's (Coetzee et al., 2011). Considering this, it can be assumed that RTW is seen as a secondary goal in the rehabilitation process in South Africa and an area that is often neglected.

1.4 SIGNIFICANCE OF THE STUDY

Literature reviewed indicates an exponential increase in the incidence of TBI both internationally and nationally. As reviewed in the literature above, statistics on TBI indicate that severe TBI survivors are unlikely to return to work at the same capacity as they did prior to the injury. This is in part due to the severity of disability impact in this category of TBI as well as external factors influencing RTW.

The findings of this study will expand on the existing knowledge available on the lived experience of the RTW process for TBI's with specific consideration to severe TBI's. Therefore, this study focused on severe TBI survivors who had a solid base of pre-injury work skills from a stable and secure work environment.

There is a comprehensive framework of labour legislation in South Africa that promotes the RTW for PWD's. There is however a divergence between policy and practice as is evident in the low percentage of PWD's employed in the open labour market. The findings of this research will assist in identifying the factors that enhance and impede the process of RTW and provide insight regarding what to address when re-integrating PWD's into the work place, particularly severe TBI survivors.

For RTW to be considered a primary rehabilitation goal, it needs to be implemented at a PHC level. It is envisaged that the findings of this study will inform and support the development of the undergraduate VR curriculum for the Occupational Therapy Programmes in South Africa. This will in turn promote the development of clinicians that enter the PHC and community settings to be skilled enough to effectively address the factors influencing the RTW process of PWD's.

1.5 RESEARCH QUESTION

Consideration of the above information identifies the need in literature to ask the following question:

“What are the factors that influence the return to work of individuals who have sustained a severe traumatic brain injury in South Africa?”

1.6 AIMS AND OBJECTIVES

The aim of the research is to identify and explore factors influencing the RTW for severe TBI's who were employed in a stable, secure environment for more than three years prior to the injury. The objectives of the study were:

- To identify and explore personal attributes such as values, interests and motivation that enhance or impede the RTW of severe TBI individuals;
- To identify and explore developed habits and routines that enhance or impede the RTW of severe TBI individuals;
- To identify and explore residual performance skills that enhance or impede the RTW of severe TBI individuals;
- To identify and explore environmental factors that enhance or impede the RTW of severe TBI individuals.

1.7 METHODOLOGY

1.7.1 STUDY DESIGN

Snape and Spencer (2013) note that a qualitative research approach provides an in-depth understanding of the participants circumstances, experiences and perspectives by allowing exploration of complex issues. A phenomenographical approach was chosen as this allowed the researcher to explore and understand each participant's perspectives regarding the factors influencing their RTW. The philosophy regarding phenomenography as developed by Marton (1981), notes that research aims at learning about individual's experiences. Such experiences are perceived and conceptualised differently within what is culturally understood and related to the world each participant lives in. Questions asked within a phenomenographic are semi-structured and open-ended (Stenfors-Hayes, T., Hult, H., & Dahlgren, M. A, 2013). Through participant sharing and asking in-depth questions, the researcher was able to gain in-depth understanding of their lived experience. South Africa has a diverse culture and a qualitative research approach allowed the research objectives to be explored in a manner that was culturally specific (Mack, Woodsong, MacQueen, Guest, & Namey, 2005).

1.7.2 SAMPLING AND RECRUITMENT OF PARTICIPANTS

Qualitative research uses non-probability purposive sampling (Ritchie, Lewis, & Elam, 2013). This allowed the researcher to select participants specifically for the purpose of the study. This included individuals who had sustained a severe TBI and were employed in a stable, secure environment for more than three years prior to their injury. Medico-legal practices were approached as this was a field within occupational therapy where functional capacity to return to work is highlighted. Assessment records in these practices were searched and files that met the inclusion criteria were selected. The specific inclusion and exclusion criteria included the following:

1.7.2.1 Inclusion Criteria

- Diagnosed on admission to a medical facility or by a neurologist/neurosurgeon as having sustained a severe TBI (GCS score of between 1-8);
- A minimum of 3-5 years post injury (allowing for an element of recovery to have taken place);
- A minimum of three years of premorbid stable skilled employment;
- Male or female individuals between the working ages of 23 years – 65 years at the time of the accident;
- Male or female individuals who are or are not currently employed in the open labour market;
- Male or female individuals who, with or without the use of a translator, can understand and respond to verbal questions.

1.7.2.2 Exclusion Criteria

- Individuals who sustained a mild TBI (GCS of 13-15) or moderate TBI (GCS 9-13);
- Individuals who may have additional premorbid or current psychiatric diagnosis according to the DSM IV;
- Individuals who make use of wheelchairs as their main form of mobility (so as to exclude any potential mobility difficulties as a primary reason for poor RTW);
- Individuals who are required to use prosthetic limbs to facilitate function (so as to exclude any potential mobility difficulties as a primary reason for poor RTW).

1.7.3 SAMPLE SIZE AND STUDY POPULATION

The sample size was determined by theoretical saturation. Mack et al. (2005) describes this as a point where no new data brings additional information required to answer the research question. Eleven participants were sourced from medico-legal practices in Gauteng and KwaZulu-Natal. As a similar study addressing the perceptions of RTW following TBI was done in the Western Cape (Soeker, M., Van Rensburg, V., & Travill, A. 2012b); Gauteng and KwaZulu-Natal allowed for potential participants to be sourced from areas in the northern and eastern aspects of South Africa. Participants had been

involved in road accidents with the exception of one participant who was involved in a fall. Two female participants and nine male participants participated in the study. Their ages at the time of the accident ranged from 22 years – 60 years with time since the accident ranging from 3 years – 16 years. Their various employments fell within categories ranging from top managerial positions to unskilled laborious positions while their stable and secure pre-injury employments were between 3 years – 35 years. Participants were from Gauteng, KwaZulu-Natal, Free State, Limpopo and the Eastern Cape. A detailed description of each participant can be found in *Appendix I p. 78*

1.7.4 SETTING

Of the eleven interviews, four interviews were conducted in a private office at a medico-legal practice in Pretoria, Gauteng while four interviews were conducted at the homes of the participants in Gauteng and KwaZulu-Natal. Three interviews were conducted at a common meeting place in KwaZulu-Natal where privacy was ensured.

1.7.5 DATA COLLECTION

Guided by a phenomenographic approach to the research; semi-structured, open-ended interviews were used to collect data between 01 July 2016 and 31 September 2016 (Stenfors-Hayes, T., et al 2013). The Worker Role Interview (WRI) questionnaire (Kielhofner, 2008) was purchased and used as a guide to adapt open-ended questions which were asked (*Appendix D p. 64 and Appendix G p 72*). The WRI is a tool developed by Gary Kielhofner that assesses volition, habituation and performance in relation to the environment and work (Biernacki, 1993). This method of collecting data was optimal for exploring the participant's personal histories, perspectives and experiences of how they interpret and order their environment. Questions asked of the participants were posed in the same sequence however, as the participants were allowed the freedom to choose how to respond to each question, this sequence was often fragmented. At the end of the interview, each question was addressed. Field notes were taken of the clients verbal and non-verbal behaviour during the interview and were used to guide the transcriptions to allow for a better understanding of the content of the interview.

1.7.6 PILOT STUDY

A pilot study is referred to as a smaller version of the planned study used to guide and inform the development of the actual research (Prescott and Soeken, 1989, Jariath et al., 2000). A pilot study was conducted with one female participant from a higher socio-economic status and one male participant from a lower socio-economic status 1 month prior to the interviews for the main study. These were conducted in medico-legal practices in Gauteng and each participant was provided with an informed consent. As the WRI's reliability and validity has been supported throughout research (Biernacki, 1993), the pilot studies were completed to test the data collection method in order to ensure that the

adapted questions collected valid and reliable information that remained relevant and meaningful to the study within the South African context (van Teijlingen and Hundley, 2002). Furthermore, the piloted studies ensured that the questions asked had correct wordings so as to avoid ambiguity, remain culturally sensitive and ensure that the research question was answered. The outcome of the pilot studies noted that while changes to the type of questions were not required, the manner in which they were asked i.e. use of tonal influences in the researcher's voice were needed depending on the race of the client. Questions posed did not need to be amended however more prompts were required with the participant of a lower socio-economic status. The analysis from the data collected from the pilot studies was done in conjunction with the findings from the actual study and were used in combination with the data gathered from the remaining nine participants.

1.7.7 DATA ANALYSIS

Prior to the analysis of the data, each interview was transcribed by the researcher. Naturalised transcription (Mero-Jaffe, 2011) was used to transcribe spoken language as well as non-spoken language such as pauses, laughter, mumbles and stutters. The detailed descriptions transcribed, together with documented field notes allowed the researcher a more complete and valid picture of the content of the interview.

Clarke and Braun (2013) identified six phases of thematic analysis that were used to analyse the data inductively into codes, themes, sub-themes and categories. Firstly, *familiarisation with the data* was established by the researcher listening to the audio-taped data and reading through each of the transcripts semantically several times. Interesting features were manually identified, highlighted and recorded separately. Secondly, *coding* was done by systematically and manually assigning codes to the highlighted data that addressed each research question. Thirdly, considering the research question, similarities were identified from each code to which a broader pattern of meaning emerged. This allowed for the *searching for themes*. Four original themes emerged from the study and through the fourth step of *reviewing potential themes*, each theme was further developed into a series of sub-themes and categories. In the fifth step, *defining and naming themes*, a detailed description of the theme was defined by using specific extracts sourced from the data. In the final sixth step of *producing the report*, the researcher was provided with the final opportunity to refine the analysis. By using exact quotations from the data, the researcher was able to tell a story about the data collected.

1.7.8 DATA MANAGEMENT

Data was collected using audiotapes, field notes, observations of non-verbal behaviour, reflective journaling and biographical questionnaires (*Participant information form in Appendix H p.76*). All digital information gathered by the researcher was stored on an archival media that was password protected. A back-up of the recorded interviews were placed onto an external hard drive and stored in a safe on the private property of the researcher. Non-digital data such as consent forms and written field notes were clearly labelled according to the participants' number. This was stored in a sealed envelope in a locked safe. In keeping with the University of KwaZulu-Natal's Ethics Policy, all data will be kept for five years after which raw data will be shredded while electronic data and audiotapes will be permanently deleted.

1.8 TRUSTWORTHINESS

Trustworthiness is established through validity and reliability checks throughout the research process (Khan 2014). As a qualitative approach was used for this research, trustworthiness is assessed in the credibility, transferability, dependability and confirmability of the research (Anney 2014)

1.8.1 CREDIBILITY

Credibility was ensured as the research was only conducted upon approval from the ethics committee. The researcher established rigour by establishing a prolonged engagement, through prior telephonic conversations with each participant, to facilitate a relationship of trust between the researcher and participant prior to the initial meeting (Anney 2014). Bitsch (2005) noted that it was important in qualitative research for the researcher to immerse themselves in the world of the participant. Patton (1990) further noted that the credibility of the researcher is especially important in qualitative research. It is noted that the researcher has five years of clinical experience in the assessment and treatment of individuals with TBI as well as four years of experience in the area of work. This allowed a better understanding of the participants 'world' following a TBI and provided strength in analysing and interpreting the answers to facilitate the development of themes pertinent to the research.

Prior and throughout the interview process, participants were given opportunities to refuse to participate. This ensured that the interviews involved only those participants who were genuinely willing to participate in the research. During the interview, the researcher used probes to obtain detailed data. At times, questions were asked again by rephrasing them in a different manner. This allowed the researcher to identify any contradictions of which this data was then be discarded.

Throughout the research process, the researcher sought support and counsel from peers and supervisors to scrutinise the study and provide feedback. This provided the researcher with the opportunity to improve the quality of the findings (Anney 2014)

The researcher used different methods of data gathering such as observation, field notes as well as interviews to gain information (Anney 2014). This allowed for data triangulation and assisted the researcher in reducing possible bias as well as cross-examined the veracity of the responses by the participants.

1.8.2 TRANSFERABILITY

Transferability is the degree to which the researcher was able to transfer the results of the research to other contexts (Bitsch 2005). This was achieved by using different sources of data collection which allowed for a more comprehensive understanding of the data. Furthermore, the researcher documented the findings and justified the methodological approach in a manner that could be replicated for further research. Transferability was further enabled through the process of purposeful sampling. The information from each participant is described in depth in *Appendix I p.78*

1.8.3 DEPENDABILITY

According to Cohen (2011), dependability is ensuring that the information provided is correctly interpreted by the researcher and is achieved through an audit trail, a code-recode strategy, triangulation and peer examination (Anney, 2005). Within the research, all raw data, interview and observation notes and documentation were collected and used in the interpretation of the results. Coding of the data was done and through regular peer briefings to ensure validation, a process of re-coding was established. This further facilitated analytical triangulation of the data.

1.8.4 CONFIRMABILITY

Confirmability ensured that the findings of the research were derived from the data (Tobin & Begley, 2004). This was achieved through bracketing and triangulation so as to reduce researchers' bias. Triangulation of sources allowed data to be compared from different methods of collection i.e. from observations made during the interview, the interview process itself and documented accounts. During the transcription of the data, data was checked to ensure accurateness. An audit trail was used to document how the study was conducted. Additionally, to ensure reliability, the researcher involved an independent reviewer to evaluate and corroborate themes. This was followed by an operational discussion to develop a more relevant code and enabled the researcher to compare the two sets of feedback.

1.9 ETHICAL CONSIDERATIONS

This research study was approved by the Biomedical Research Ethics Committee (BREC) at the University of KwaZulu-Natal (Ref. no BE 211/16 *Appendix C p.62*) on the 08 June 2016. Cognisance was taken of the fact that the research population were considered a vulnerable population. These vulnerabilities could stem from concerns regarding their ability to make informed consent and the nature of their participation (Mc Donald K & Kidney, C 2012). The researcher minimised coercion by clearly explaining the expectations of the research. Opportunity was provided for the participants to confer with family members and the researcher made herself available to answer questions from family members should the need have arisen prior to consent being obtained. According to Orb, Eisenhauer, and Wynaden (2001), the nature of ethical problems in qualitative research is subtle and different. The researcher remained responsible for protecting each participant and the following ethical considerations were considered:

1.9.1 BENEFICENCE AND NON-MALEFICENCE

Beneficence ensures that the well-being of each participant is taken strongly into consideration (Orb et al., 2001). During the interview process, rest breaks were taken with participants who became fatigued. Additionally, the open-ended questions were asked in a culturally appropriate and sensitive manner so as to reduce the possible psychological risks of the research e.g. relived experience. One participant became emotional during the interview at which point the researcher provided her with water and tissues and comforted her using vocal intonations. When the participant indicated that she was ready to continue, the interview resumed. Provision to refer participants for additional support services was made in which one participant required additional support. In this instance, the researcher provided the participant with three contact telephone numbers of support structures within his area of residence.

1.9.2 AUTONOMY AND INFORMED CONSENT

Gatekeeper's permission was obtained from four medico-legal practices (*Appendix A p.54 and Appendix B p.55*) and participation in the research study was voluntary. Each participant identified by the researcher was contacted telephonically. The aim, purpose and process of the study was explained to them and verbal consent was obtained. Prior to the commencement of the interview, the details of the study were fully disclosed to them by going through an information letter verbally with each participant (*Appendix E p. 66*) and informed consent was obtained from each participant (*Appendix F p.69*). Additionally, they were made aware that they are free to withdraw from the study at any time, without giving a reason. Those participants who travelled a distance were reimbursed in full for travel expenses incurred.

1.9.3 SCIENTIFIC INTEGRITY

To achieve this, the researcher abided by all research ethic rules and regulations as guided by the University of KwaZulu-Natal.

1.9.4 PRIVACY, CONFIDENTIALITY AND ANONYMITY

Privacy was facilitated by ensuring interviews were done in a private area with no possible audience. Furthermore, in the case where collected data was to be transcribed, earphones were used. Confidentiality and anonymity was ensured by assigning participants pseudonyms i.e. M1/F2. Within the raw data, each participant's full name was not disclosed and during transcriptions, pseudonyms were carried forward. Participants were made aware of the fact that in no manner were their names apparent and each participant was individually shown the pseudonym used for them.

1.10 IN SUMMARY

This chapter has highlighted TBI within the international and South African contexts and has addressed the RTW challenges many severe TBI's face. It has emphasized RTW strategies through VR and noted the aims and objectives to be answered through the research study. The significance of the study has highlighted the importance of increasing the awareness of RTW of severe TBI's and PWD's. Chapter 2 will go into depth on the results and interpretation of the study. This is in the format of a journal article to facilitate dissemination of the findings of the study. Chapter 3 is the synthesis of what these results mean to the greater body of knowledge and highlights the importance and worth of returning to work following a severe TBI.

CHAPTER 2

PRESENTATION AND INTERPRETATION OF FINDINGS

“We all need employment” – An exploration of the factors which influence the return to work after a severe traumatic brain injury

2.1 INTRODUCTION

The findings of this study are described in the format of a scientific journal article. Literature addressed the RTW of individuals with a TBI with particular focus on severe TBI's. Two themes emerged from the study and outlined the factors influencing RTW of severe TBI.

2.2 PUBLICATION DETAILS

Title: “We all need employment” – An exploration of the factors which influence the return to work after a severe traumatic brain injury

Authors: Moller, Claire-Lynn
Lingah, Thanalutchmy
Phehlukwayo, Stanford Mandlenkosi

Status: Submitted 01 December 2016 (*Appendix J p. 80*)

2.3 JOURNAL INFORMATION

The South African Journal of Occupational Therapy (SAJOT) is the official journal for the Occupational Therapy Association of South Africa (OTASA). It is the leading publication for research into occupational therapy in Africa. SAJOT publishes and disseminates research articles that contribute to the scientific knowledge of the profession and its outcomes with particular reference to service delivery in Africa. It is the only profession-specific journal available in South Africa and Africa for dissemination. The journal has an impact factor of 0.11

2.4 CONTRIBUTION RECORD

The candidate conceptualised the paper and was the main author. Ms Lingah and Mr Phehlukwayo contributed towards the writing of the paper.

2.5 JOURNAL ARTICLE

“We all need employment” - An exploration of the factors which influence the return to work after a severe traumatic brain injury

Author 2016

ABSTRACT

Introduction

While individuals with mild and moderate traumatic brain injury (TBI) manage to achieve some degree of successful return to work, individuals with severe TBI have a reduced chance of returning to work. This study aimed at investigating how personal factors, workplace environment and vocational rehabilitation influenced the return to work and assumption of the worker role of individuals with severe TBI.

Method

A phenomenographic study design with purposive sampling was used to select 11 participants. Data was collected through semi-structured interviews using the Worker Role Interview (WRI) as a guide. Data was thematically analysed using Clarke and Braun's six phases of thematic analysis.

Results

Two themes emerged: *It's all about me*, which addressed the internal aspects of the role of a worker and *The support for me* which focused the external factors of personal, work and rehabilitative support.

Conclusion

Results showed that rehabilitation, personal factors and work support were critical for successful return to work for severe TBI survivors. Results indicated that participation in work was important in developing self-worth as participation in any other area of daily living. With regard to personal factors, rehabilitation and support was vital in maintaining self-worth after an injury. This could be enhanced through vocational rehabilitation.

Key words: Traumatic brain injury, return to work, vocational rehabilitation

INTRODUCTION

Traumatic brain injury (TBI) often results in residual cognitive, behavioural, physical and functional impairments that may influence the person's independence in most areas of occupation including work. TBI is classified into mild, moderate and severe injury using the 15-point Glasgow Coma Scale (GCS) of which the degree of impairment depends on the severity of injury sustained¹. The objectives of the study were to investigate how personal factors, workplace environment and vocational rehabilitation influenced the return to work and assumption of worker role of individuals with severe TBI's who had a successful pre-injury employment.

Most individuals who have sustained a TBI are of working age and fulfil the role of a worker yet return to work is not a term that is commonly associated with this population group². Furthermore, limited attention has been paid to vocational rehabilitation and return to work of severe TBI's. Conklin, Flaumer and Venables³ regarded vocational rehabilitation as a predictor for return to work and sustained employment. Gilworth, Eyres, Carey, Bhakta and Tennant⁴ further assert that vocational rehabilitation significantly impacts on the return to work process. While individuals with mild and moderate TBI's manage to achieve some degree of successful return to work, individuals with severe TBI's experience large scale marginalisation⁴.

Engagement in the worker role is a complex phenomenon which involves dynamic interaction between internal factors such as motivation and external factors such as societal perceptions of people with disabilities. With severe TBI, these internal and external factors are compounded by the severity of the injury, which negatively affects their ability to participate in the worker role. Access to rehabilitation services can assist with remediation of residual impairments and facilitate alternative methods of engaging in the occupation of work.

It is acknowledged that individuals with severe TBI can, to some degree return to work^{2, 5-8} however there is a gap in existing knowledge about severe TBI's returning to work after having had stable, secure and skilled pre-injury employment. Considering this, there is a need to understand factors which influence the return to work for individuals with severe TBI's in South Africa. This will contribute towards the development of a client-centred vocational rehabilitation programme for severe TBI individuals in addressing the underlying cause of the low employment rate of people with disabilities'.

LITERATURE REVIEW

According to the World Health Organisation, TBI's are reportedly the leading cause of both death and disability with the assumption that the more severe the injury, the more significant the disability⁹. Globally, more than 5% of people suffer from a serious brain injury¹⁰. Population based studies show that the incidence of TBI is between 91 per 100 000 in Spain, 180 and 250 per 100 000 per year in the United States, 322 per 100 000 in the South of Australia and 316 per 100 000 in South Africa¹¹. This indicates a high incidence in South Africa when compared to other countries.

There is an estimated 89,000 new cases of TBI's reported annually in South Africa¹⁰. According to Statistics South Africa¹², the total deaths from "*other external causes of accidental injuries*" (p.44) contributed to 60% of non-natural deaths in 2014. Between January 2014 and January 2016, a provincial hospital in the Eastern Cape had a 90 in 100 000 incidences of TBI. Of those TBI's, 73.7% were in working aged individuals¹³. In KwaZulu-Natal, data analysed from a tertiary hospital between January 2009 and December 2013 found that isolated, severe brain injuries accounted for 24 in 100 000¹⁴. The prevalence and severity of TBI at a national level in South Africa is currently unknown.

Considering that most of these individuals are of working age and fulfil the worker role, time off work or the inability to return to work could have a substantial impact on the economy. Despite comprehensive labour legislation and policies protecting and promoting the employment of people with disabilities in South Africa, the inclusion of people with disabilities into the open labour market is poor¹⁵. Identification of the factors influencing the return to work of severe TBI's will contribute towards addressing the underlying cause of poor return to work of people with disabilities.

Internationally, severe TBI's have up to a 74% lower chance of return to work than mild and moderate injuries¹⁶. Increased severity of a TBI have worse employment outcomes¹⁷ and a lower probability of maintaining employment¹⁸. In South Africa, TBI's had a 32% return to competitive employment¹⁹ however there was no distinction made in the study regarding the severity of the injury. Considering the return to work success rate of severe TBI's, it can be assumed that the most affected category of TBI could have been severe TBI's.

Following a severe TBI, impairments in cognitive, behavioural, physical and functional skills are considered immense and complex. Grauwmeijer, Heijenbrok-Kal, Haitsma and Ribbers²⁰ noted that the complex consequences of severe TBI's was a limitation for return to work.

Reduced self-awareness as well as emotional and behavioural dyscontrol are considered complex consequences of severe TBI which impede return to work²¹⁻²³.

Rehabilitation focuses on restoring function related mainly to basic and instrumental activities of daily living where vocational rehabilitation is directed towards restoring function related to a work environment²⁴. Vocational rehabilitation significantly impacts on the return to work process and should therefore be considered part of the primary rehabilitation goal⁴.

In South Africa, the National Rehabilitation Policy²⁵ was developed to provide therapeutic and client-centred rehabilitation to individuals at a Primary Health Care level; but there seems to be some implementation challenges of this policy. Current research shows that vocational rehabilitation is isolated, limited and fragmented in both rural and urban areas of South Africa^{26, 27}.

METHOD

Study design

A phenomenographic study design was used to meet the aims and objectives of this study. This research design was selected because it allows the researcher to explore the real-life situations and individual perspectives and variations regarding factors influencing their situation^{28,29}. In this study, the researcher explored how severe TBI influenced the performance of the worker role and return to work process following injury.

Population and sampling

To enhance variation in the research, purposive sampling was used to select eleven participants for this study based on a theoretical saturation sample size²⁹ and a predetermined inclusion and exclusion criteria. *See Table 1 below.*

Table I: Inclusion and exclusion criteria

Inclusion Criteria	Exclusion Criteria
<ul style="list-style-type: none"> ❖ Diagnosed on admission to a medical facility or by a neurologist/neurosurgeon as having sustained a severe TBI (GCS score of between 1-8) ❖ A minimum of 3-5 years post injury. ❖ A minimum of 3 years of premorbid stable skilled employment ❖ Male or female individuals between the working ages of 23 years – 65 years at the time of the accident ❖ Male or female individuals who are or are not currently employed in the open labour market ❖ Male or female individuals whom, with or without the use of a translator, can understand and respond to verbal questions. 	<ul style="list-style-type: none"> ❖ Individuals who sustained a mild TBI (GCS of 13-15) or moderate TBI (GCS 9-13) ❖ Individuals who may have additional premorbid or current psychiatric diagnosis according to the DSM V ❖ Individuals who make use of wheelchairs as their main form of mobility ❖ Individuals who are required to use prosthetic limbs to facilitate function

Variation was facilitated as the study sample comprised of two females and nine males of difference race groups and resided in six different provinces within South Africa. Injury periods ranged from 3 – 16 years and a stable premorbid employment ranged from 3 – 35 years. Types of employments varied from unskilled, semi-skilled and skilled work types. See *Table II: Participant Profile below*

Table II: Participant Profile

Participant Code	Gender	Race	Severity of Injury on admission	Age at Time of Injury	Years Since Injury	Period on Previous Job	Rehabilitation	Province
F1	F	W	3/15	25	10	5	Inpatient	Gauteng
F2	F	W	6/15	45	13	15	Outpatient	KwaZulu-Natal
M1	M	B	5/15	27	3	3	None	Free State
M2	M	B	7/15	29	8	10	None	Gauteng
M3	M	B	"Severe Diffuse"	54	3	20	None	Limpopo
M4	M	W	5/15	35	5	5	None	Gauteng
M5	M	W	3/15	60	8	35	Outpatient	KwaZulu-Natal
M6	M	I	6/15	22	3	3	Outpatient	KwaZulu-Natal
M7	M	B	8/15	33	5	10	None	KwaZulu-Natal
M8	M	I	1/15	29	12	3	Inpatient	KwaZulu-Natal
M9	M	B	7/15	44	16	13	None	Eastern Cape

Codes: W-white, B-black, I-Indian, F-female, M-male, GCS-Glasgow Coma Scale

Data collection procedures and management

Data was collected between 01 July 2016 and 31 September 2016 using audio-taped semi-structured interviews. Questions were guided by The Worker Role Interview (WRI) questionnaire. This is a work-related assessment tool developed by Kielhofner³⁰ that assesses volition, habituation and performance in relation to the environment and work. Four interviews were conducted in a private office at a medico-legal practice. Four interviews were conducted at the home of the participant and three interviews were conducted at a common meeting place where privacy was ensured. Each participant was provided with a number to ensure confidentiality and anonymity. Biographical data, prior and current employment and their initial GCS reading was obtained. Data was collected using audiotapes, field notes, observations of non-verbal behaviour and reflective journaling. This established credibility in the study. Following completion of the interview, the audiotapes were transcribed precisely as spoken and re-read for accuracy and consistency before data analysis occurred. The audiotapes were saved onto an external hard drive and locked in a safe.

Data analysis

Using a second-order perspective³¹ to analyse the variation of participants experiences of the factors influencing their return to work, the Clarke and Braun's³² six phases of thematic analysis was utilised. Data was inductively organised into codes, themes, sub-themes and

categories of description before being written up. Verbatim quotes were then used to describe the meaning of the data gathered. This is described further in *Table III* below.

Table III: Thematic Analysis of data

Clarke & Braun's Thematic Analysis	Description of the thematic analysis procedure followed
Familiarisation with the data	<ul style="list-style-type: none"> ❖ This was established by listening to the audiotaped data and reading the transcripts several times ❖ By reading the data semantically, interesting features were identified that were relevant to the research question. These were highlighted and recorded separately
Coding	<ul style="list-style-type: none"> ❖ The highlighted data was systematically coded to address each of the research objectives ❖ Using an inductive approach, each code summarised the meaning of the data (Semantic codes ³¹) ❖ A final list of codes was compiled using a table format in Microsoft Word 2010 ❖ Each item of data was collated to the respective codes
Searching for themes	<ul style="list-style-type: none"> ❖ Considering the research question, similarities were identified from each code ❖ To develop the themes, a broader pattern of meaning was identified from each coded data ❖ A more detailed code became the main focus of a theme ❖ In the development process, some codes separated to ensure that they were coherent and in-depth for answering the research question while similar codes were grouped together
Reviewing potential themes	<ul style="list-style-type: none"> ❖ Four original themes were established ❖ Each theme was reviewed further and developed in accordance to the research question ❖ By discarding one theme and integrating two themes into each other, two major themes were finalised that answered the research question ❖ Each theme had a series of sub-themes and categories ❖ Using a thematic map, the relationship between each theme and sub-theme was established and told of an “<i>analytic story</i>” ³¹
Defining and naming themes	<ul style="list-style-type: none"> ❖ A definition that was detailed and described the complexity of the data was given to each theme ❖ Specific extracts were sourced from the collated data that best described the essence and meaning of each theme, sub-themes and categories

	❖ Each theme was then named based on the overall essence of the data
Producing the report	❖ Each named theme was further reviewed to determine a particular order so as to better express the “ <i>analytical story</i> ” ³¹ ❖ The data was then written up to tell the reader a comprehensible story about the collected data in relation to the research objectives and research question

Trustworthiness

Credibility, validity, dependability and confirmability were utilised to achieve trustworthiness in this study. To establish credibility, exact quotations were used to demonstrate the relationship between the data and categories of description. Peer debriefing allowed for categories of description to be recognised and questions answered. Prolonged engagement in the research over one year was used to ensure credibility³³. The results of this study were related to similar studies⁴⁻⁸ to determine validity in the findings. Dependability and confirmability was achieved by utilising an audit trail, code-recode and reflexive journal strategies during data collection and analysis⁴.

Ethical considerations

This research study was approved by the Biomedical Research Ethics Committee (BREC) at the University of Kwa-Zulu Natal (Ref. no BE 211/16) on the 08 June 2016. To ensure scientific integrity, the research process was carried out according to the research guidelines. Gatekeeper’s permission was obtained from medico-legal practices and participation in the research study was voluntary. Informed consent was obtained from each participant and those who travelled a distance were reimbursed in full for travel expenses incurred.

RESULTS

Two main themes emerged from this study namely; “*It’s all about me*” and “*The support for me*”. The first theme, “*It’s all about me*” had three sub-themes with corresponding categories of descriptions which included *my role as a worker*, *my abilities in the role* and *my emotions in the role*. The second theme, “*The support for me*” comprised of three sub-themes with corresponding categories of descriptions namely; *personal support*, *work support* and *rehabilitative support* experienced by the participants. When all categories of descriptions were considered, the outcome space resulted in the understanding of how return to work aids in the development of *self-worth*. Figure 1 is a diagrammatic representation of the key themes, sub-themes and subsequent categories of description:

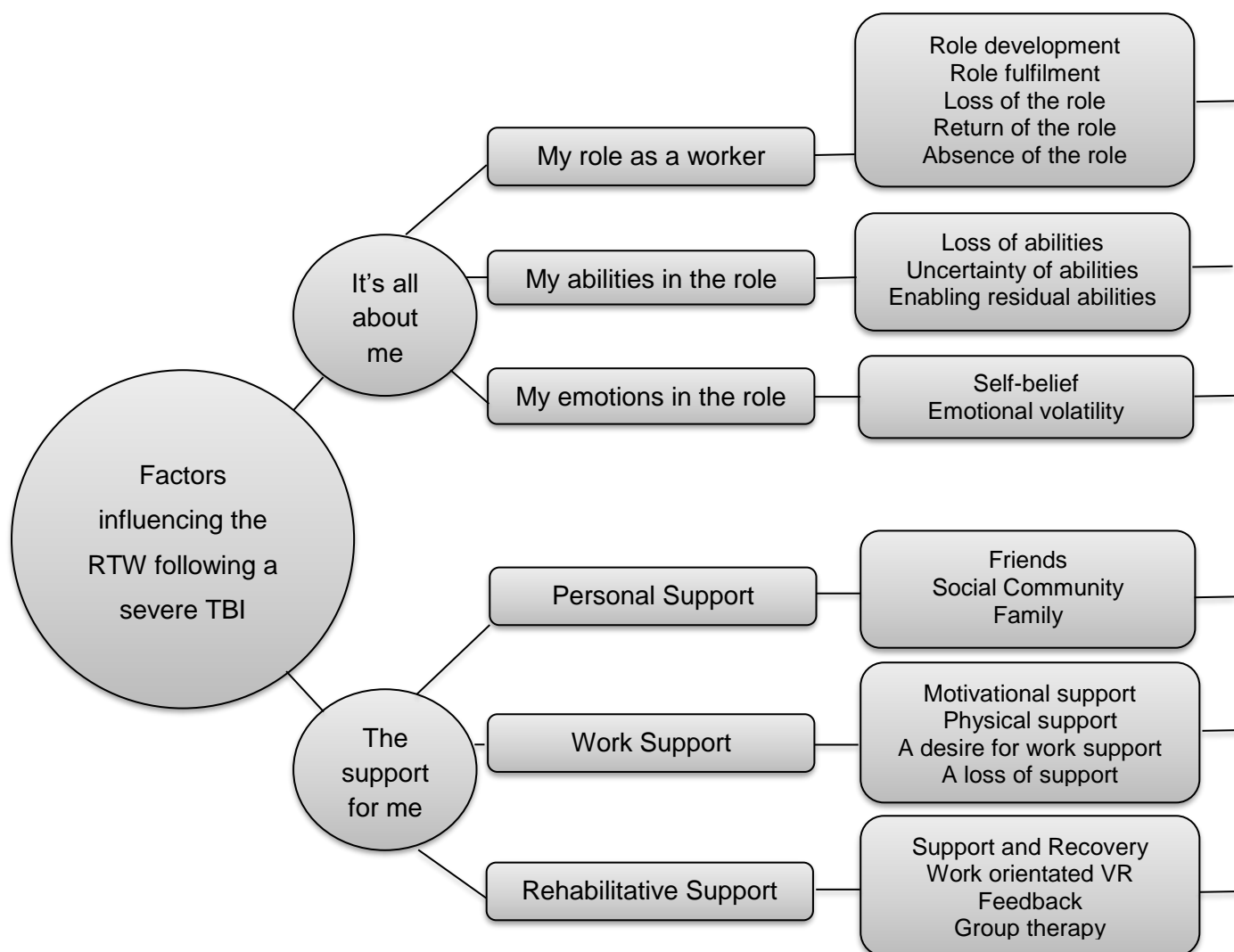


Figure 1: Diagrammatic representation of the key findings

Theme I: It's all about me

My role as a worker

This sub-theme describes categories of role development, role fulfilment, the loss of the role, the return of the role and the absence of the role.

Role development is established from experience, interests that guided choices and personality which reflects commitment, attraction and investment in the worker role. In response to role development, one participant felt that the fulfilment of the worker role was based on interest and knowledge that he had grown up with.

"I've liked it and I have know [sic] it. I've learnt it. My father have learn it [sic] before... that's a job I would like to do almost" [M2]

On the other hand, another participant added that her role was developed through experience.

"oh well, I've been teaching, for... so many years... 15 years... so I know...what is expected, from, the 4-5 year old... it's like the back of my hands" [F1]

Role fulfilment describes the intrinsic needs to serve and contribute to the greater community, develop and transfer skills and grow professionally. One participant perceived role fulfilment as more than just doing what was required, but also as making an impact.

“I couldn’t come and just sit there, and do daily work and leave, I have to make a difference” [M5]

Three participants concurred that work was important to allow for the worker role to be transferred and developed, therefore allowing for personal growth.

“When I was working, I still learn new things which in future [sic] even if I’m at, at, I’m not at the firm, I can still do it at [sic] the township” [M3]

Furthermore, professional growth was important in role fulfilment.

“I must learn from the one who knows everything about machine so that if tomorrow I’m going alone there, I know what I am going to do” [M2]

The loss of the role was identified as a loss of opportunities and a sense of isolation. Seven participants spoke of lost opportunities.

“It was a reduced role...It was like work basically put me in this corner and forgot about me you know, give me something that is not going to really affect the company as a whole. I did the bare minimum just to fill my day so that’s what they wanted me to do” [M8]

Four participants were unemployed and noted that the loss of the worker role resulted in a sense of isolation due to an inconsistent routine, poor use of time and reduced social participation.

“I hardly socialize. I hardly go out... I don’t do anything. I just stay at home and watch TV. That’s what I do. That’s it.” [M7]

The return of the role was better facilitated when some form of vocational rehabilitation was had.

“Slowly get back into work...start working five days half days and over a 3 week period they would, they would monitor and see how I cope and then after than they would increase the days” [M5]

The absence of the role was noted from nine participants who did not receive vocational rehabilitation. They were unaware that this type of rehabilitation existed.

“If I had even been aware that there was such a thing it would have been much easier” [M4]

My abilities in the role

This sub-theme comprises of three categories namely the loss of abilities, uncertainty of residual abilities and environmental influences and enabling residual abilities

The loss of abilities addresses the physical and cognitive abilities lost and loss of performance skills. The physical loss included, but was not limited to; pain, balance fallouts, reduced pace, presence of post-traumatic epilepsy, residual fractures and headaches.

"I can't sit in one place. I can't stand for long. I can't lie down for too long in the bed. So it's like something to do with my body. That's why. I can't be like in one position for all the time... I feel uncomfortable in whatever position." [M6]

A loss in cognitive abilities included, but was not limited to fallouts in orientation, understanding, decision making, planning, problem solving, memory and processing.

"It was one of the most difficult things I ever had to do, just I couldn't think, I couldn't think at all... everything was very, very difficult... just hard to think and slow at the time" [F2]

The loss of performance skills were identified as a loss in specific abilities obtained in the job.

"Previously I was good with computers but now-a-days I am battling a little bit with it" [M4]

"I wanted to go and work but I couldn't drive" [M5]

Uncertainty of residual abilities and environmental influences was apparent in participants who were unemployed or who were employed in sheltered employment. Due to the loss of a worker role, uncertainty regarding future employment in the open labour market was related to the fact that they just 'did not know'.

"I don't know, maybe all, I need to try and find out if I can still do it, maybe I can still do all of this but in a slow rate [sic], can still do most of it but slower, in the [sic] more time maybe to do it [sic]" [M7]

When asked whether participants believed they would manage in a changed environment, a sense of uncertainty emerged.

"One where they stand, there is no, there is no dust, noise [sic]. I will just sleep. Where there's the dust, there's a noise, they [sic] will, my body they [sic] will, influence my body" [M2]

Enabling residual abilities was facilitated through compensation. Confidence was therefore gained so as to continue to fulfil the worker role.

"So I have said "how can I overcome this that I don't forget something I have asked her to do and then she still has not done it?" Now I have a book and every e-mail that I send to her I stick in the book and as it comes back to me I tick it off." [F2]

To further enable residual abilities, work specific vocational rehabilitation was noted to enable residual abilities.

“Dr [name] also came to my work, she met my bosses, she met the doctors, she took a walk to see where I fell and she was exposed to what it was so she knew how to set up her rehab...she was also able to programme the rehab around what work wanted”
[M8]

My emotions in the role

This sub-theme describes categories of self-belief (including self-esteem, acceptance, confidence and self-image) and emotional volatility.

Self-belief describes how participation in the worker role develops self-esteem however the impact of the injury results in a disbelief-in-self. Of self-esteem, all participants described a sense of confidence, happiness, independence, pride, fulfilment, reward and recognition.

“There is [sic] still some times when, when I go to the shops. There was one lady that I trained. She still remembers me by name. I can’t remember her name but she still remembers me by name and she will come to me and say, she will tell a friend or something like that and will say “that’s the guy that took me for my driver’s licence”. So knowing that you took that person and helped that person to get a driver’s licence. That was, that was actually nice” [M4]

Development of confidence was portrayed by enabling residual abilities. Recovery to whatever degree allowed for a level of acceptance and enhanced confidence.

“I’ve come to terms with it now and accepted where I am and what happened, and because I’m ok with myself now...I, I’m not worried about people that don’t accept me...so I think, I’m not afraid of putting myself out” [F1]

Disbelief-in-self emerged as a great imposition in return to work and reduced the confidence experienced.

“I don’t want to draw attention... just now the suggestion I make is not right and they think “ja that guy is stupid or something...Maybe because they will think I’m stupid”...I am just scared that maybe I won’t be able to do the work” [M4]

When it was explored whether VR would be useful, the general consensus was that it would be. However a reduced belief-in-self raised concerns regarding how this intervention would be perceived by others.

“If they know about it, what if they, like feel sorry for you...they will treat you differently from now...shame, poor guy, go sit there in the corner” [M4]

A reduced self-confidence was enhanced by a reduced self-image as a result of the physical injuries sustained.

“Because of my appearance now, I was scared about what people think because of my eye. My face was this figured badly. It is still a bit like that” [M6]

Emotional volatility describes emotions of depression and anger experienced by all participants.

“When I don't keep myself busy and I have too much time to think and do nothing, I get depressed and, so, I enjoy the work” [M3]

In a working environment, two participants noted the challenge of anger management.

“It has been very hard to control my temper and to control what I say” [M8]

Theme II: The support for me

Personal support

Personal support was described as support from friends, a social community and family that influenced the return to work.

“I'm living with people who you [sic] cannot regard me as an outcast. Who still value me. So therefore in that regard, I think it's playing a very important role. It moulds me into accepting that you see I still have value to offer to people” [M3]

As a consequence of not returning to work, a loss of personal support was experienced by seven participants

“I'm usually at home so I [sic] hardly got any friends now” [M7]

Work support

Support from colleagues and employers emerged as an instrumental facilitator in the return to work. Categories arising from this sub-theme included motivational support, physical support, desire for support and loss of support.

Motivational support was best described with a participant placing egocentric value to such support.

“His colleagues and employer [sic] telling the learners you see, this man who played a very important role. So such, such type of instances made me feel very confident in my execution of duties instead of loathing the profession. In my view I should have left the profession long ago.” [M3]

Physical support was noted when participants were compensated or accommodated for their reduced physical ability.

“I talk to [colleague's name], [colleague's name] I want to have a little rest now [sic] and [colleague's name] would say just go... when the makhulu boss [senior boss] come [sic] I tell him you are in the bathroom” [M2]

A desire for work support was experienced from nine participants who did not receive vocational rehabilitation intervention. One participant felt that the benefits of vocational rehabilitation would facilitate support and understanding.

"If there will be [sic] someone to tell him...he's willing to work. He can do the job but the problem is this and this" [M2]

The loss of support was seen as a direct barrier to return to work following a severe TBI.

"When I got back to work, all my stuff had been packed up into a box and they had already planned and he had actually already made arrangements to move me to a department, a clinic downstairs in the dungeon, miles away from where I was." [F2]

The loss of support was noted by five participants as a loss of social interaction with colleagues.

"It's very, very difficult to have, to make friends with colleagues because they see it as, preferential treatment" [F1]

Rehabilitative support

Only two participants received some degree of vocational rehabilitation and subsequent rehabilitative support. Categories derived from this sub-theme included support and recovery, work orientated vocational rehabilitation, feedback between employer and Vocational Rehabilitation specialist and group therapy.

Support and recovery was influential in facilitating return to work.

"I would have never been able to have an exponential recovery, I still say exponential, because the dedication of the rehab team was out of this world" [M8]

Work orientated VR facilitated the professional growth of the participants.

"Because of what I learnt in rehab and how I have compensated has bought me four years into this company" [M8]

Feedback between the employer and Vocational Rehabilitation specialists resulted in subsequent support for the participants.

"I think they [employer] were very good to me [sic] they just went along, I was seeing [neuropsychologist] every week um [sic], she gave them some feedback as well, um ja [sic] I don't think, I know there was not [sic] any pressure or anything in terms of not going back to work" [M5]

Group therapy as part of the vocational rehabilitation process facilitated rehabilitative support.

"Dr [name], she used to have sessions with similar injury people, she used to have round table and discuss issues and talk about to each other and each try to help the other and help to fix it and she would also come in and input ways of how to fix problems and how to handle the anger...I have learnt a lot on how to control and work with the anger side of things, which has helped my job" [M8]

DISCUSSION

The aim of this study was to investigate how personal attributes, developed habits and routines, residual performance skills and environmental factors influenced the return to work of severe TBI's who had a stable and secure pre-injury employment.

The first theme, *"it's all about me"* was about the worker role being an integral part of one's existence that provided a sense of self-worth. These findings are supported by literature from Greenberger et al. (1993)³⁵ which showed that the worker role was instrumental in developing self-worth. All participants felt that they became competent in their work skills with time and that this resulted in role development and provided opportunities for professional growth, recognition and promotion. Participants also added that the worker role provided opportunities to transfer these skills into their home environments, which was instrumental in developing self-worth.

Varying degrees of physical, cognitive, psychosocial and work specific impairments consequential to a severe TBI resulted in reduced participation in the worker role. For participants who returned to work, their confidence in work participation had reduced. For participants who did not return to work, they were uncertain about how they could participate in work tasks in the future. This poor confidence, uncertainty and disbelief-in-self resulted in reduced self-worth. As a result, participants further isolated themselves and the loss-of-self became worse. This finding was in keeping with literature suggesting that a loss-of-self and identity is an inherent consequence of TBI^{5,6,8,36}.

Vocational rehabilitation intervention facilitated self-worth. Only two of the eleven participants participated in vocational rehabilitation. This allowed them to engage in work tasks within the confinements of their residual abilities and facilitated elements of recovery. The significance of this recovery was indicated by one participant as *"...exponential, because the dedication of the rehab team was out of this world"* [M8]. The nine participants who did not have vocational rehabilitation intervention reported more uncertainty, less confidence in their abilities and reduced self-belief. This finding is in keeping with literature that VR intervention improves self-efficacy³⁷.

Participants attributed emotional investments in the worker role as the need to make a difference and serve the community. This developed self-worth, self-esteem and positive emotions and behaviours. A consequence of severe TBI was emotional and behavioural volatility. All participants reported having depression which impeded their motivation to participate in the worker role. Feelings of reduced confidence and disbelief-in-self were

compounded. This resulted in isolation and poor motivation to serve the community and continued the cycle of depression. Participants also reported an inability to manage aggression or temper. As a result, support from friends, family, colleagues and employers were reduced. Return to and maintaining pre-injury employment was further disadvantaged. These findings support emotional and behavioural dyscontrol, a term described by Arciniegas and Wortzel³⁸ as a disabling consequence of TBI.

The second major theme to emerge from this study was support. Participants described this support as personal support from friends and family, work support from colleagues and employers and rehabilitative support following vocational rehabilitation intervention. Support is accepted as a fundamental factor that either facilitates or impedes the return to work of people with TBI's^{18,39}. The degree to which support was highlighted in the study upholds this view. When support was given from friends and family, participants did not feel pressurised to return to work, regardless of age. This provided them with time to concentrate on their recovery process. When they did return to work, motivational support from colleagues and employers offered these participants a sense of confidence to engage holistically in the worker role despite their difficulties. This helped them develop a sense of acceptance of their injury. Through vocational rehabilitation, a deeper level of understanding and insight between the individual, family and employer was facilitated. The support participants received paved the way for reasonable accommodations. As a result, their competencies in their established skills were re-enhanced. This promoted confidence and self-belief to fulfil the worker role.

As a direct opposite to the facilitators arising from support were the barriers as a result of the loss of this support. Family and employers who had less confidence in the participants abilities to fulfil the worker role was seen as poor personal and work support. This resulted in participants feeling uncertain about the progression of their recovery and ability to participate in their work environment. This led to further isolation.

The findings of the research study therefore gave some insights into personal and environmental factors which enhanced or impeded participants return to work following their injury.

IMPLICATIONS OF THE RESEARCH

Inferences from the research suggest that the value of return to work is a facilitator for self-worth in individuals with severe TBI. This study further suggests that participation in work is a precursor for participation in other areas of daily living and return to work should not be a neglected aspect of the rehabilitation process. The findings of this study support the view from South African based literature^{19,26} which indicates that vocational rehabilitation is not readily available and accessible at Primary Healthcare level. It is envisioned that the implementation of vocational rehabilitation at a Primary Healthcare level could address the problem of accessibility and facilitate return to work for individuals with severe TBI. By taking into consideration a solid skill base and stable and secure work environment, this study highlighted the need for vocational rehabilitation to consider pre-injury skills and environments to facilitate and accelerate return to work. Finally, the identification of both internal (motivation) and external (societal perceptions) factors could guide the development of a holistic, client-centred approach to vocational rehabilitation strategies and programmes for severe TBI's.

LIMITATIONS OF THE STUDY

While the researcher was aware of her role and how her interpretations may have influenced the research process, the interview process was done singularly, which may have influenced the data received. However, interpretation of the data with peers attempted to disband this. As the research used a qualitative design to answer the research question, it cannot be generalised to the population at large. There were only two female participants which implies that the findings in this study were biased towards the male opinions. One participant was not proficient in English and thus a translator was required. The problem in finding a translator for this participant may have resulted in some information being "lost in translation". It was further identified that only two participants received vocational rehabilitation and while the information was a pertinent facilitating factor in the return to work, it was not enough to develop this theme further.

CONCLUSION

In this study, factors that influenced the return to work for severe TBI's who were employed in a stable, secure environment for more than three years prior to the injury, were identified and explored. The findings in this study indicated that both the internal and external factors played a critical role in the return to work for individuals with severe TBI's. The results further indicated that participation in work was important in developing self-worth as participation in any other area of daily living. Results also showed that rehabilitation and support was vital in maintaining self-worth after an injury and could be enhanced through vocational rehabilitation. Overall, the results showed that the return to work success for individuals with severe TBI was dependent on rehabilitation, personal factors and work support.

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2.6 CONCLUSION

Internal and external factors were identified to influence the RTW of severe TBI's. Internal factors were noted to be innate characteristics. They described the formation and development of the worker role and the subsequent loss of this role. Additionally, it identified the abilities needed to perform this role and the influence of residual performance skills. Furthermore, the internal factors explored the emotions involved in the worker role. External factors were identified to be personal, work and rehabilitative support. The research study identified that these factors were crucial in the development and fulfilment of self-worth and highlighted the importance of implementing a RTW programme that is client-centred.

CHAPTER 3

SYNTHESIS, CONCLUSION AND RECOMMENDATIONS

3.1 INTRODUCTION

This research study was developed from the need to identify and explore the factors influencing the RTW for severe TBI's who were employed in a stable, secure environment for more than three years prior to the injury. Two themes emerged from this study. "*It's all about me*" describes internal factors and *The support for me* describes the external factors that influence the RTW of severe TBI's. Figure 3.1 below illustrates the integration of the internal and external factors that make up the worker role and influence the RTW of severe TBI's.

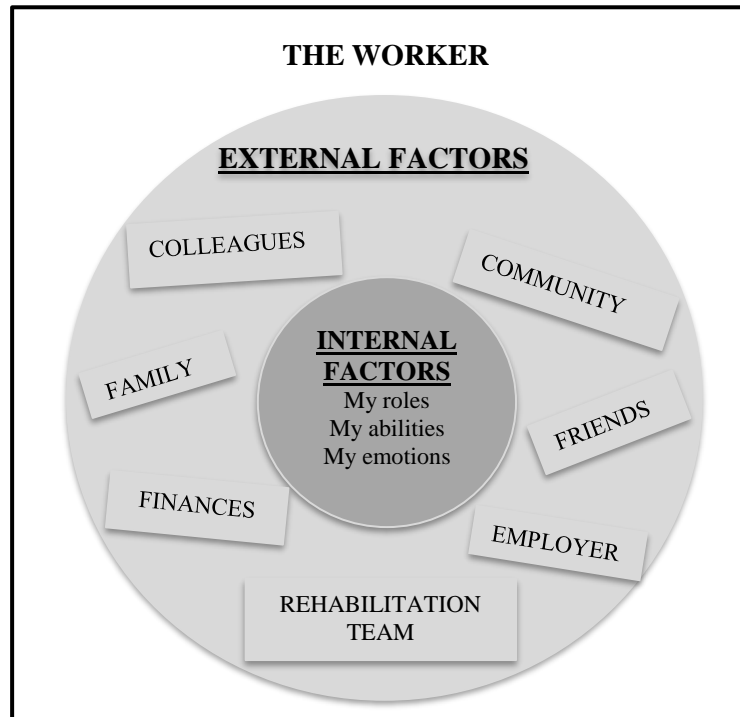


Figure 3.1 Internal and external factors identified in the research study that influence the RTW of severe TBI and the fulfilment of the role of the worker

The formation of the worker role as an internal process emerged in the first theme “*It’s all about me*”. This included role development, role fulfilment and loss of the role as a direct consequence of severe TBI. Furthermore, it included the return of this role as well as absence of the role as a consequence of not receiving appropriate rehabilitative intervention. Residual performance skills emerged as a sub-theme of “*My abilities in the role*” and emotional consequences of a severe TBI as a sub-theme of “*My emotions in the role*”.

The second theme that emerged; “*The support for me*”, described the environmental factors that enhanced or impeded the RTW of severe TBI’s. These were support from friends, family, colleagues, employers and a rehabilitative team. Furthermore, it described the importance and subsequent loss of this support and the impact it had on the RTW process for severe TBI’s.

3.2. IMPORTANCE OF THE WORKER ROLE

The researcher found that participants placed considerable emphasis on the importance of participation in work. This research exclusively included participants who had a stable and secure work environment. As a result, they developed competency in their skills and abilities over time. This resulted in a sense of achievement and success which is supported by Gini (2013). He noted that self-esteem, a contingency of self-worth is a direct result of participation in work. However, self-esteem was only developed when achievement and success in the task was established (Gini, 2013). Achievement and success was described as professional growth, recognition, promotion and skill transference. Further to this, the researcher infers that active involvement in the worker role post-injury highlights the importance of RTW as part of the rehabilitation process.

The following illustration demonstrates the inter-relatedness of the internal and external factors that influence the RTW of severe TBI’s. It reveals these factors in the identification of the worker role and development of self-worth. This will be described further.

3.2.1 ROLE FORMATION AND RETURN TO WORK

Participants described personal attributes such as personality, pre-injury interests, experience and the innate need to serve the community as enhancing factors that influenced the RTW following severe TBI. As suggested by literature, a change in personal attributes is a common consequence of a TBI (Andelic, Sigurdardottir, Arango-Lasprilla, & Godbolt, 2016; Gregório, Gould, Spitz, van Heugten, & Ponsford, 2014; Hooson et al., 2013). In this study it was found that because there was minimal change in these personal attributes, RTW was enhanced. A key finding from the research study was the influence of time in the worker role pre-injury. It was found that considerable time fulfilling the worker role pre-injury resulted in personal attributes becoming engrained in the psyche of the individual, therefore supporting habituation. This adds to the wider body of literature and supports the assumption made by the researcher in Chapter 1 that the worker role evolves overtime; where volition, routines, habits and performance skills become an automatic process of occupational engagement (Kielhofner, 2008).

Japp (2005) suggested that participation in the worker role is seen as a distant, unreachable goal in the rehabilitation process for severe TBI's. While the researcher agrees with this to an extent, it was also found in this study that this was not the case for some participants. Personal attributes such as financial motivation, drive and values and interests seemed to enhance the RTW process. However, despite returning to some form of employment, these factors did not guarantee the maintenance of the position held.

3.2.2 ROLE DEVELOPMENT AND RETURN TO WORK

By fulfilling the worker role over a period longer than three years, a sense of competency was established which enhanced the development of the worker role. This unfolded in the categories of professional growth, recognition from society, promotional opportunities and skill transference. This supports findings regarding enhancement of occupational performance and development of skills through integration into the workplace (Das & Baruah, 2013; Ferguson, 2016; Kielhofner G, 1998). Because participants had developed into the worker role pre-injury, they reported that employers as well as society had a pre-conceived idea of their capabilities. This allowed for a greater opportunity at receiving positive support to RTW. Subsequently individuals were able to better compensate for a loss of function when returning to work as their skills had become habitual and their role had been pre-morbidly developed. This supports the literature that suggests that habituation is an innate engagement in occupation (Kielhofner, 2008). This is further supported by Kielhofner who stated that time is needed to internalise the worker role and develop routine behaviours (Kielhofner, 1999). The implication of these findings is that an established routine provided an understanding of what to expect and enhanced the RTW process for a severe TBI. Conversely, this study also revealed that

habituation can be an impeding factor in the RTW process for severe TBI's. Participants who had some understanding of their residual abilities developed a sense of uncertainty regarding their capabilities to meet the worker role. This resulted in a decrease in self-confidence, belief in self and inevitably a reduced self-worth. This finding implies that while habit and routine are important in the development of the worker role, when facilitating the RTW of severe TBI's, programmes need to be client-centred and specific to take into account individual needs.

3.2.3 IMPAIRMENTS AFTER SEVERE TBI AND RETURN TO WORK

Impairments in physical, cognitive and emotional functions are an acknowledged consequence of severe TBI and impede the RTW process (Grauwmeijer et al., 2012; Stocchetti & Zanier, 2016). Yet RTW following injury enhances recovery of these performance skills (Wehman, Arango-Lasprilla, Kunz, & Targett, 2016).

Two such impairments that strongly emerged from this study as impeding factors in the RTW were emotional and behavioural volatility. All participants reported some degree of emotional and/or behavioural impairment which subsequently had a direct influence on the fulfilment of self-worth. Such impairments resulted in less support being received and impeded the RTW process, despite the fact that they had developed the worker role. This finding highlights the consequences of such impairment in the RTW process. Furthermore, it supports the literature findings that emotional and behavioural dyscontrol are predominant factors impeding the RTW following TBI (Arciniegas & Wortzel, 2014; Donker-Cools, Daams, Wind, & Frings-Dresen, 2016; Ponsford et al., 2014). These findings do however indicate the need for further research of the influence of such impairments on a pre-morbid stable and secure work environment.

When participation in occupation following a severe TBI was positive, it was reported to enhance recovery of residual impairments. This in turn enhanced the RTW process. However, it was clear within the study that a positive RTW and maintenance of the worker role was achieved through vocational rehabilitation and support.

An interesting finding of the study was that participants who were previously involved in unskilled, manual labour work had a lower level of confidence in their capabilities to fulfil the worker role than participants in more skilled work. This was despite the establishment of habits and routines. While they demonstrated self-awareness of their residual performance skills, perhaps this self-awareness resulted in the acknowledgement of the strenuous work environment and their understanding of the demands that would be expected of them. This warrants further research into the development and consequences

of self-awareness on the RTW process of severe TBI's and the exploration of the impact of residual performance skills within a stable and secure work environment.

It was found in this study that uncertainty resulted in a decreased ability to participate in occupation. Participants described the uncertainty as not knowing whether they were able to apply their residual abilities to the environments. The negative influences of uncertainty and reduced confidence resulted in a reduced belief-in-self and had a negative impact on the fulfilment of self-worth. Literature suggests that the loss-of-self is a consequence of a decreased ability to RTW for TBI's. (Bush et al., 2016; Hooson et al., 2013; Nochi, 1998; Soeker et al., 2012b). The findings of this research expand on this literature by identifying two possible sources of this loss-of-self as being uncertainty and a decrease in self-confidence.

3.2.4 VOCATIONAL REHABILITATION AND RETURN TO WORK

Of the eleven participants, only two participants received some form of VR. However, the importance of VR intervention was significantly highlighted by these participants as enhancing factors in the RTW process and therefore warrants discussion.

VR was described by participants as a process that enhances personal attributes, residual performance skills, developed habits and routines and environmental factors that influence the RTW of severe TBI's. These participants were provided with positive support to fulfil the worker role and grow the sense of self-worth. These findings supported literature on the positive influence of VR intervention and the RTW process (Hart, 2010; Tyerman, 2012; Waddell et al., 2008).

By exploring VR with participants who had not received this intervention, two thought-provoking findings arose. Firstly, they were unaware of what this type of rehabilitation was. This indicates a reduced awareness of VR within the South Africa context and supports the notion that VR is isolated and superficial (Coetzee et al., 2011; Uys et al., 1997). Furthermore, it supports the findings of Soeker et al. (2012a) and Webster, Taylor, and Balchin (2015) that not all TBI's in South Africa have access to RTW interventions. Secondly, some participants felt such intervention would result in preferential treatment within the work place and create a sense of pity amongst employers and colleagues. This would subsequently lower an already reduced level of self-worth and indicates the need for further research.

3.2.5 SUPPORT AND RETURN TO WORK

Support as identified in this study was seen as an external environmental factor that had a direct and significant influence in RTW process of severe TBI's. It was found to have both positive and negative effects. When support was received, RTW was enhanced. This facilitated fulfilment of the worker role and achievement of self-worth. When support was not received, RTW was impeded resulting in a loss of optimal fulfilment of the worker role and a negative influence of self-worth. Bonnetterre et al. (2013) found that work and family support was crucial in RTW and maintaining employment where Forslund et al. (2013) noted that overall support was a positive predictor in RTW. The findings of this study confirm this and highlight the idea that support is a fundamental factor in the success of the RTW process and cannot be excluded in the RTW programme for severe TBI's.

3.3 CONCLUSION

Personal attributes, developed habits and routines, residual performance skills and environmental factors were identified and explored of which the researcher was able to identify the factors that influence the RTW of severe TBI's.

The findings of this study have highlighted that VR in South Africa is inadequate. Where vocational rehabilitation is implemented, the research study has emphasized the need for a client-centred approach.

The findings of this study are in keeping with the available literature on the return to work of TBI's. What this study has achieved is the understanding that participation in the worker role is a fundamental factor in the development of self-worth. While this study only considered severe TBI's, with the available literature on mild and moderate TBI's, it can be argued that no matter what severity of traumatic brain injury an individual has sustained, the return to work is a vital part of a person's recovery and sense of self following injury.

3.4 RECOMMENDATIONS

The following recommendations are based on the findings in this research study.

- Research of the influence of residual performance skills within a stable and secure work environment;
- Research into the development and consequences of self-awareness on the RTW process of severe TBI's;
- Research into the impact of VR with consideration of a stable and secure work environment;
- Research related to hospital policies regarding vocational rehabilitation;
- Research into the perceptions of occupational therapists and vocational rehabilitation at a PHC level.

It is hoped that the above recommendations will enable further insight into the importance of return to work programmes for severe TBI's. This is hoped to be reflected in a change in undergraduate and post-graduate curriculum inclusion for health care professionals working in the area of vocational rehabilitation, in particular Occupational Therapy.

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ANNEXES

APPENDIX A:

**Information letter to Occupational Therapy medico-legal practices in
Gauteng and KwaZulu-Natal**



Dept. Occupational Therapy

Westville campus

PRIVATE BAG X54001 DURBAN

4000 SOUTH AFRICA
TELEGRAMS: 'UDWEST'

TELEX: 6-23228

Date: _____

To _____

I am undertaking research to explore the factors influencing the return to work of individuals having sustained severe traumatic brain injuries. This study is being undertaken as part of a Masters in Occupational Therapy at the University of Kwa Zulu Natal.

Participation:

As your practice assesses an individual's residual work ability and capacity, and sees a variety of different diagnosis, including traumatic brain injuries, I am writing to ask if it would be possible to recruit participants for this study from your practice. The client will be eligible to participate if he/she suffered a severe traumatic brain injury.

It will be required that the researcher is given access to relevant files of individuals assessed at your practice between 2010 and 2015, that have been diagnosed with a severe traumatic brain injury, either by a neurosurgeon/neurologist or by having a Glasgow coma scale of between 0 – 8 on admission to hospital.

Each participant that meets the inclusion criteria will be invited to participate in the study and will be provided with an information letter and consent form. The interview may not necessarily take place at your practice however, in the event that this is required, a date and time will be arranged with yourself at a time that is convenient with you.

I have prepared a description of the study and what is involved in it for the potential participants, and I have attached a copy for you to read as well as the questions that will be asked to each participant.

Confidentiality will remain paramount and no individual information will be made available to any party. This research will add significant value as it will contribute to a better understanding of the factors influencing the return to work of a severe traumatic brain injured individual in the South African context.

Should you require any further information, you are welcome to contact me. You will be welcome to request a copy of the research protocol and ethical clearance certificate for the research.

Thank you

Claire-Lynn Moller

Should you have any queries, please contact me on the following numbers

Tel number: **084 400 1086 (c)**

Email: **clairelynn.moller@gmail.com**

Or my supervisors:

Ms T Lingah 031 260 7341 (email: Lingaht@ukzn.ac.za)

Mr SM Phehlukwayo 031 260 7954 (email: Phehlukwayos@ukzn.ac.za)

Or:

BIOMEDICAL RESEARCH ETHICS ADMINISTRATION

Research Office, Westville Campus

Govan Mbeki Building

University of KwaZulu-Natal

Private Bag X 54001, Durban, 4000

KwaZulu-Natal, SOUTH AFRICA

Tel: 27 31 2602486 - Fax: 27 31 2604609

Email: BREC@ukzn.ac.za

APPENDIX B:

Gatekeepers permission from Occupational Therapy medico-legal practices in Gauteng and KwaZulu-Natal

a) Ms Leazanne Toerien

Toerien Occupational Therapists

b) Ms Rehana Paruk

Rehana Paruk Occupational Therapy Services

c) Ms Jane Bainbridge

Bainbridge, Minnaar & Grey Occupational Therapists

d) Ms Shelley Broughton

Broughton and Jonck Occupational Therapists

a) Ms Leazanne Toerien: Toerien Occupational Therapists



LEAZANNE TOERIEN
occupational therapist

The factors influencing the return to work of individuals having sustained severe
traumatic brain injuries in South Africa

Dear Ms Moller

I (name and surname) Leazanne Toerien have been
fully informed of the procedures to be followed in the course of the research.

In signing this consent form, I agree that eligible participants sourced from my practice may
be invited to participate in this study

The information obtained from each participant will not be made available. The medico-legal
report will not be influenced by the information obtained for this study

I agree to make my practice available for your research at a time and date convenient to me.
I understand that should I have any questions, they can be answered at any time by the
researcher or her supervisors at the University of KwaZulu-Natal.

Signature

Name

Position

Practice

Date

Contact number

Toerien

Leazanne Toerien

Director (Occupational Therapist)

031 34467

25/5/2016

083 495 6813

Leazanne Toerien B.OccTher (Sle)

Assisted by: C. Moller Bsc.OT (WITS), G. Jordaan B.OccTher (UP),

G du Rand B.OccTher (UP) Dip in Voc Rehab (UP), N van Coler B.OccTher(UP) Dip in Hand Ther(UP)

Tel: 012 754 2032 Cell: 083 485 6813 Fax: 086 670 5760 Email: admin@toerienoc.za

Address: Unit 13, Building 5, Jean Park Chambers, 202 Jean Ave, Centurion

Pt No: 0313467 VAT No: 4290267124

b) Ms Rehana Paruk: Rehana Paruk Occupational Therapy Services



RESEARCH TOPIC: The factors influencing the return to work of individuals having sustained severe traumatic brain injuries in South Africa

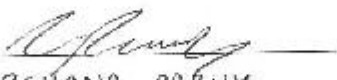
Dear Ms Claire-Lynn Moller

I (name and surname) REHANA PARUK have been fully informed of the procedures to be followed in the course of the research.

In signing this consent form, I agree that eligible participants sourced from my practice may be invited to participate in this study

The information obtained from each participant will not be made available. The medico-legal report will not be influenced by the information obtained for this study

I agree to make my practice available from your research at a time and date convenient to me. I understand that should I have any questions, they can be answered at any time by the researcher or her supervisors at the University of KwaZulu-Natal.

Signature	
Name	<u>REHANA PARUK</u>
Position	<u>OCCUPATIONAL THERAPIST</u>
Practice	<u>OCCUPATIONAL THERAPY</u>
Date	<u>04-07-2016</u>
Contact number	<u>082 369 6600</u>

c) Ms Jane Bainbridge: Bainbridge, Minnaar & Grey Occupational Therapists



BAINBRIDGE, MINNAAR & GREY
OCCUPATIONAL THERAPISTS

U.S. DEPARTMENT OF JUSTICE
FEDERAL BUREAU OF INVESTIGATION
WASHINGTON, D.C. 20535

The factors influencing the return to work of individuals having sustained severe traumatic brain injuries in South Africa

Dear Ms Moller

I (name and surname) JOHN E. LAMERSON have been fully informed of the procedures to be followed in the course of the research.

In signing this consent form, I agree that eligible participants sourced from my practice may be invited to participate in this study.

The information obtained from each participant will not be made available. The medico-legal report will not be influenced by the information obtained for this study

I agree to make my practice available from your research at a time and date convenient to me. I understand that should I have any questions, they can be answered at any time by the researcher or her supervisors at the University of KwaZulu-Natal.

Signature _____

Name _____

Position

Practice

Date _____

Contact number

Jero Stokke, *Director, IT & M&M*
 Torbjørn Mørch, *Senior Advisor*
 Anne Marie, *Senior Advisor*
 Helene, *Senior Advisor*
 John, *Senior Advisor*

Revised: 02/07/2012
 Date: 02/07/2012
 File: 020712_01
 Page: 16/22

d) Ms Shelley Broughton: Broughton and Jonck Occupational Therapists



Shelley Broughton BSc OT; MSc OT (Neuroscience)
Felicity Jonck B. Occ. Ther; BA (Hons) AAC

291 Underwood Road, Sarnia, Pinetown
PO Box 39272, Queensburgh 4070

Email: occrehab@aol.com
Tel: 031 708 1785/8
Fax: 031 708 1789

**The factors influencing the return to work of individuals having sustained severe
traumatic brain injuries in South Africa**

Dear Ms Moller

I (name and surname), Shelley Broughton, have been fully informed of the procedures to be followed in the course of the research.

In signing this consent form, I agree that eligible participants sourced from my practice may be invited to participate in this study

The information obtained from each participant will not be made available. The medico-legal report will not be influenced by the information obtained for this study

I agree to make my practice available from your research at a time and date convenient to me.

I understand that should I have any questions, they can be answered at any time by the researcher or her supervisors at the University of KwaZulu-Natal.

Signature

Name

Shelley Broughton

Position

Partner / Occupational Therapist

Practice

Broughton and Jonck

Date

2nd September 2016

Contact number

031 708 1788

APPENDIX C:

Ethical clearance for the intended research study



UNIVERSITY OF
KWAZULU-NATAL
INYUVESI
YAKWAZULU-NATALI

08 June 2016

Mrs CL Moller (216073334)
Discipline of Occupational Health
School of Health Sciences
clalrelvnn.moller@gmail.com

Dear Mrs Moller

Protocol: The factors influencing the return to work of individuals having sustained severe traumatic brain injuries in South Africa.
Degree: M Occupational Health
BREC reference number: BE211/16

The Biomedical Research Ethics Committee has considered and noted your application received on 17 March 2016.

The study was provisionally approved pending appropriate responses to queries raised. Your response received on 01 June 2016 to queries raised on 23 May 2016 have been noted and approved by a sub-committee of the Biomedical Research Ethics Committee. The conditions have now been met and the study is given full ethics approval.

This approval is valid for one year from 08 June 2016. To ensure uninterrupted approval of this study beyond the approval expiry date, an application for recertification must be submitted to BREC on the appropriate BREC form 2-3 months before the expiry date.

Any amendments to this study, unless urgently required to ensure safety of participants, must be approved by BREC prior to implementation.

Your acceptance of this approval denotes your compliance with South African National Research Ethics Guidelines (2015), South African National Good Clinical Practice Guidelines (2006) (if applicable) and with UKZN BREC ethics requirements as contained in the UKZN BREC Terms of Reference and Standard Operating Procedures, all available at <http://research.ukzn.ac.za/Research-Ethics/Biomedical-Research-Ethics.aspx>.

BREC is registered with the South African National Health Research Ethics Council (REC-290408-009). BREC has US Office for Human Research Protections (OHRP) Federal-wide Assurance (FWA 678).

The sub-committee's decision will be **RATIFIED** by a full Committee at its meeting taking place on 12 July 2016.

We wish you well with this study. We would appreciate receiving copies of all publications arising out of this study.

Yours sincerely

Professor J Tsoka-Gwegweni
Chair: Biomedical Research Ethics Committee

cc supervisor: linah@ukzn.ac.za
cc Postgrad: rene@ukzn.ac.za

Biomedical Research Ethics Committee

Professor J Tsoka-Gwegweni (Chair)

Westville Campus, Govan Mbeki Building

Postal Address: Private Bag X54001 Durban 4000

Telephone: +27 (0) 31 260 2488 Facsimile: +27 (0) 31 290 4600 Email: brec@ukzn.ac.za

Website: <http://www.research.ukzn.ac.za/Research-Ethics/Biomedical-Research-Ethics.aspx>



Founding Campuses: Durban Edgewood Howard College Medical School Pietermaritzburg Westville

APPENDIX D:

Worker Role Interview purchase receipt

Purchase Receipt

Date: 6/14/2016 3:56:04 AM

Order Number: 33163760092A0

Vendor Information:	Customer Information:
University of Illinois at Chicago Occupational Therapy-CAHS (MC 811) Attn: MOHO Clearinghouse 1919 West Taylor Street Chicago, Illinois 60612-7250 USA	Moller, Claire clairelynn.moller@gmail.com

Title of Publication	Price	Quantity	Amount Due
Worker Role Interview (WRI) Version 10.0, 2005 - Digital License	\$40.00	1	\$40.00
Total Cost USD			\$40.00
Amount Paid			\$40.00

The product(s) you have purchased can be accessed electronically via your [MOHO Web account](#).

This charge will show up on your credit card statement as University of Illinois Web Urbana, IL.

Thank you for your order!

APPENDIX E:

Information letter for participants



Dept Occupational Therapy

Westville campus

PRIVATE BAG X54001 DURBAN

4001 SOUTH AFRICA
TELEGRAMS: 'UDWEST'

TELEX: 6-23228

The factors influencing the return to work of individuals having sustained severe traumatic brain injuries in South Africa

Purpose of the study:

My name is Claire-Lynn Moller and I am undertaking research to explore the factors that may influence the return to work for an individual who has sustained a severe traumatic brain injury. This study is being undertaken as part of a Masters in Occupational Therapy at the University of Kwa Zulu Natal.

Participation:

You have been asked to participate because you have sustained a severe traumatic brain injury and have previously been employed in the open labour market.

You will be interviewed to enable you to give your perceptions on the factors that have influenced the return to work process following your injury. It does not matter if you did not return to work, as the factors surrounding this will also be explored. The process should not take up more than one and a half hours of your time and you will incur no financial costs.

Participation is voluntary, and if you find any part of the information getting intrusive and wish not to answer, or would prefer to withdraw altogether at any time during the process, you are free to do so without prejudice to you.

At no time will any of the information be used to identify you to anyone but the researcher. There will be absolute confidentiality.

Risk:

There is no direct benefit to you in participating, and it will not cause you any harm. It will, however, enable us to build up a base of South African knowledge to enable an appropriate and client-centred intervention at a rehabilitation level for the facilitation of return to work for people having sustained a severe traumatic brain injury.

Thank you

Claire-Lynn Moller

Should you have any queries, please contact me on the following numbers

Tel number: **084 400 1086 (c)**

Email: **clairelynn.moller@gmail.com**

Or my supervisors:

Ms T Lingah 031 260 7341 (email: Lingaht@ukzn.ac.za)

Mr SM Phehlukwayo 031 260 7954 (email: Phehlukwayos@ukzn.ac.za)

Or:

BIOMEDICAL RESEARCH ETHICS ADMINISTRATION

Research Office, Westville Campus

Govan Mbeki Building

University of KwaZulu-Natal

Private Bag X 54001, Durban, 4000

KwaZulu-Natal, SOUTH AFRICA

Tel: 27 31 2602486 - Fax: 27 31 2604609

Email: BREC@ukzn.ac.za

APPENDIX F:

Declaration of consent



Dept Occupational Therapy

Westville campus

PRIVATE BAG X54001 DURBAN

4002 SOUTH AFRICA
TELEGRAMS: 'UDWEST'

TELEX: 6-23228

The factors influencing the return to work of individuals having sustained severe traumatic brain injuries in South Africa

Participant's understanding: Declaration of Consent

- I confirm that I have been informed by the researcher about how the study will be conducted and the risks of the study.
- I have understood what the study is about after reading the information document
- I am aware that:
 - All records will be kept confidential and secure
 - The findings of the study will be published in the research report and will possibly be published
 - The researcher might share the findings with her supervisors to validate the findings
- I understand that:
 - Participation is voluntary
 - The interview will be digitally recorded
 - I will not be identified by name in the study
 - I can withdraw my consent and participation in the study at any time if I do not feel comfortable participating, without prejudice to me
 - I will not directly benefit from this research project, although it will cause me no harm
 - I can have access to the results of the project, should I require

I consent to have the interview audiotaped

yes

no

Participant

Name (Please print)

Signature

Date

Place

Researcher

Name

Signature

Date

Place

APPENDIX G:

Interview schedule

1. PRESENT ROLES AND ROUTINES

- What responsibilities have you got at the moment?
- How did your routine change when you got sick?
- Do you miss working?
- Is work an important role for you at the moment? In the future?

2. INTERESTS

- What of your current responsibilities do you enjoy?
- Do you have any other interests or hobbies that you do? (I) With whom?
- What do you do to have fun?

3. CURRENT SKILLS / ABILITIES

- Are you able to do the things you need to do? What limits your ability to do them?
- Are you able to concentrate, problem solve and make decisions for the things that you need or want to do?
- Are there any other things that affect your ability to do the things you want or need to do? (E.g. drug / alcohol use, criminal history, communicating with others)

4. PHYSICAL & SOCIAL ENVIRONMENT

- Are there any physical barriers at work or at home that prevent you from working?
- Are you able to overcome these limitations and barriers?
- How do your family / friends feel about you not working?
- What kinds of support do your family and peers give you in attempts to keep working?
- How has your boss supported you in continuing at work?
- Do you prefer to work alone or with others? How well do you work with others?

5. EXPERIENCE OF WORK

- How did you choose the jobs you did in the past?
- What was the most enjoyable and / or satisfying work that you have had? What made it enjoyable or satisfying?
- What was the least enjoyable and / or satisfying work you have had? What made it such an unsatisfying experience?
- What work responsibilities in your life do you feel you do or have done well, or are proud of?
- What are some of the things that you have been unsuccessful at doing within a work situation?

6. PREVIOUS WORK ROUTINE

- When you worked, did you set goals for yourself? (i.e. promotions, productivity, things to achieve)
- What work habits have supported you in getting your work done in the past?
- What work habits would you like to change?

7. FUTURE WORKER ROLE

- Is working / finding a job / keeping a job important to you at the moment?
- What would be important about having a job? What would be less important about having a job?
- What makes it hard for you to work? What would need to change for you to be return to work / start working?
- Do you have the physical ability to accomplish what you need to do in a job?
- Are you able to concentrate, problem solve and make decisions to work?
- Are there any other things that affect your ability to work? (E.g. drug / alcohol use, criminal history, communicating with others)
- What help or support would you need to help you continue working?
- What kind of work do you feel capable of doing?
- What skills do you have which would help you to continue working / return to work?
- What other experience do you have that might help you to continue working / return to work?
- What do you think is the likelihood of keeping a job at the moment? In the next 6 months and in the future?
- If you were looking for work, what kind of work would you find more enjoyable and / or satisfying?
- Do you have goals to work towards continuing at work / returning to work?

9. FUTURE ROLES AND ROUTINES

- What kind of expectations would you have if you were to return to work (working hours, job description, duties etc.)
- How would working again affect your current routine? How would you make adjustments?

10. FUTURE WORK ENVIRONMENT

- If you were to work, what kind of physical environment would suit you? What about the physical environment would make work more difficult for you?
- If you were at work, what support would you expect to get from your family / friends?
- If you were at work, what support would you expect or need to get from your boss? Colleagues?

11. VOCATIONAL REHABILITATION

- After your injury, can you describe what rehabilitation you received?
- After your injury, can you describe is you received help from professionals to go back to work

APPENDIX H:

Personal information form

Personal Information

Age _____

Gender _____

Marital Status _____

Number of Dependents _____

Province of Residence _____

Highest Education Achieved and date achieved

Employment Information

Current Occupation

Number of Employers since you started working _____

Total years Employed _____

Last day Employed _____

Currently employed? _____ If yes, how many months/years at current employer? _____

Type of work _____

Prior Information _____

Medical Information

Year of Accident _____

GCS level _____

Current Medication _____

Any chronic Illnesses _____

APPENDIX I:

Detailed description of all participants

Table II: Participant Profile

Participant Code	Gender	Race	Severity of Injury (GSC/ neurologist)	Age at the time of injury	Years since the injury	Marital Status	Province of Residence	Current Employment Status	Job description	Years in previous employment prior to injury	Rehabilitation intervention
F1	F	W	3/15	25	10	Single	Gauteng	Supported Employment	Previous: Grade R Teacher Current: Grade R Teacher	5	Inpatient Rehabilitation
F2	F	W	6/15	45	13	Married	KwaZulu-Natal	Employment in the open labour market	Previous: Senior secretary to the dean of Engineering Current: Personal Assistant to the Deputy Vice Chancellor of Research	15	Outpatient Physiotherapy
M1	M	B	5/15	27	3	Single	Free State	Unemployed	Previous: Millwright Artisan Current: Unemployed	3	None
M2	M	B	7/15	29	8	Single	Gauteng	Sheltered Employment	Previous: Builder Current: Self-employed	10	None
M3	M	B	Unknown "Severe Diffuse"	54	3	Married	Limpopo	Employment in the open labour market	Previous: High School Teacher Current: High School Teacher	20	None
M4	M	W	5/15	35	5	Married	Gauteng	Employment in the open labour market	Previous: Driving Instructor Current: Store and administrative Supervisor	5	None
M5	M	W	3/15	60	8	Married	KwaZulu-Natal	Volunteer Employment	Previous: Senior Director Current: Retired	35	Outpatient
M6	M	I	6/15	22	3	Single	KwaZulu-Natal	Unemployed	Previous: Data Capturer Current: Unemployed	3	Outpatient Rehabilitation
M7	M	B	8/15	33	5	Single	KwaZulu-Natal	Unemployed	Previous: General Worker Current: Unemployed	10	None
M8	M	I	1/15	29	12	Divorced	KwaZulu-Natal	Employment in the open labour market	Previous: Chemical Engineer Current: Project Engineer	3	Vocational Rehabilitation and inpatient rehabilitation
M9	M	B	7/15	44	16	Married	Eastern Cape	Unemployed	Previous: Taxi Owner and Driver Current: Unemployed	13	None

Codes: W-white, B-black, I-Indian, F-female, M-male, GCS-Glasgow Coma Scale

APPENDIX J

Proof of submission for publication with SAJOT

[SAJOT] Submission Acknowledgement



Inbox x



Blanche Pretorius sajot@mweb.co.za via sendgrid.net

to me ▾

Dear Claire-Lynn Moller:

Thank you for submitting the manuscript, "'We all need employment" – An exploration of the factors which influence the return to work after a severe traumatic brain injury" to the South African Journal of Occupational Therapy. With the online journal management system that we are using, you will be able to track its progress through the editorial process by logging in to the journal web site:

Manuscript URL: <http://www.sajot.co.za/index.php/sajot/author/submission/448>
Username: clmoller

If you have any questions, please contact me.
Thank you for considering this journal as a venue for your work.
Regards
