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Patient motivation in therapy and its impact on rehabilitation outcomes post-stroke: the therapists' perspective

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PATIENT MOTIVATION IN THERAPY AND ITS IMPACT ON REHABILITATION OUTCOMES POST-STROKE: THE THERAPISTS' PERSPECTIVE

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A Dissertation submitted to the Faculty of Health Sciences, University of the Witwatersrand, Johannesburg, in fulfilment of the requirements for the degree Master of Science in Physiotherapy

Johannesburg, 2020

DECLARATION

I, Xoliswa Cynthia Ntsinde, declare that this thesis is my own, unaided work. It is being submitted for the degree of Master of Physiotherapy at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at any other University.



(Signature of candidate)

27th day of August 2020

DEDICATION

I wish to dedicate this to my children, viz. Mosa, Thuso, Sean and grandson Mohau whom despite all the challenges we have been through recently, kept on encouraging and urging me to forge on. I particularly want to single out my youngest son Sean Oliver, who at the tender age of seventeen has constantly lent his shoulder for me to lean on whenever things got really rough. To him I say, “I love you, son and pray you never change as you have a very big heart.”

ABSTRACT

Background

Patient motivation has been associated with positive rehabilitation outcomes in stroke survivors. Patient motivation has also been attributed to stroke survivors who present with a positive manner towards rehabilitation, whilst low motivation is attributed to a negative manner towards rehabilitation. Currently there are no clear or universal guidelines of ascertaining motivation status in patients with stroke, understanding of factors that may impact it and its effect on rehabilitation outcomes.

Aim of the study

It was to establish if the rehabilitation therapists have a shared understanding of determining stroke patient motivation in rehabilitation, the appropriateness of the use of motivation and to determine the rehabilitation therapist's perception of a relation between patient motivation and rehabilitation outcomes**.**

Methods

A qualitative research design using semi-structured interviews for data collection was undertaken. Interviews were conducted in three rehabilitation hospitals in the Gauteng province, South Africa. Study participants were stroke rehabilitation therapists. Their responses were manually documented and also recorded using a voice recorder to capture the data. The collected data was transcribed verbatim. Content analysis was done. Emergent themes were established. Coding of the key concepts was done by the researcher and the research assistant. An inductive approach was used to develop the code structure. The existing codes were refined using a constant comparison method. The code structure was finalized at the point of saturation. Two members of the research team reviewed the data independently checking for discrepancies in the finalized code structure. Final codes to all data were discussed and settled.

Results

Patient motivation was determined by the patient's manner towards the rehabilitation and professionals. The elements of the manner were identified as willingness, compliance and active participation. Family support, social circumstances and therapists' attitudes were deemed to have an effect on the patient's motivation.

Therapists believed that the term motivation as used in stroke rehabilitation was used appropriately as it was based on the patient's ability and experiences. There was general consensus among the therapists of the direct relationship between motivation and rehabilitation outcomes.

Conclusion

A number of factors are attributed to the patient's motivation and thus there is a need for rehabilitation therapists to pay attention to these factors, to enable them to support the stroke survivors in staying motivated thereby optimising the rehabilitation outcomes.

Key words: Stroke, Motivation, Rehabilitation Therapists, Knowledge

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LIST OF ABBREVIATIONS

CNS	Central Nervous System
AHA	American Heart Association
ASA	American Stroke Association
WHO	World Health Organization
HSFSA	Heart and Stroke Foundation of South Africa
CVD	Cerebrovascular Disease
HIV	Human Immunodeficiency virus
AIDS	Acquired Immune Deficiency Syndrome
TIA	Transient Ischemic Attack
ADL	Activities of daily living
PT	Physiotherapist
OT	Occupational therapist
ST	Speech therapist
STR	Stroke Rehabilitation Therapists

CHAPTER 1
1. INTRODUCTION

1.1 BACKGROUND

The word motivation is commonly used by therapists in the rehabilitation hospitals when patients are either cooperative or uncooperative to the therapist's requests. Maclean *et al.* (2002) noted patient motivation as a commonly used concept by rehabilitation professionals in clinical practice. They warned that the use of patient motivation in clinical practice could have negative implications in patient care due to blurred boundaries of the use of this term. Colombo (2007) is of the view that motivation is often used in rehabilitation as a determinant for outcomes, and that motivation is referred to those patients that adhere to the rehabilitation programme with lack of adherence to the programme as an indication of low motivation.

In the rehabilitation hospitals, patients are expected to participate in exercise programmes to address their motor fall-out and aid in restoring their functional abilities. There are many factors that construe a patient as being not fully complying with this requirement. Pyae *et al.* (2014) believes that motivation and rehabilitation outcomes are closely related. They found that rehabilitation exercises are monotonous and tiring for patients. They concluded that using motivational gaming could be a way of motivating patients in addition to ensuring good patient –therapist relationship, goal setting and music therapy.

In rehabilitation hospitals patients that are seen to be "cooperative" are often met with more enthusiasm whilst the "uncooperative" patients are attended with less enthusiasm (Maclean *et al.,* 2002). Maclean *et al.* (2000) found that the beliefs in patients with low and high motivation was that their rehabilitation environment had an influence on their outcomes. Accordingly, patients with low motivation were unfavourably compared to others, had insufficient knowledge of rehabilitation process and received mixed messages from their rehabilitation therapists. Patients with high

motivation had good understanding of the rehabilitation process and had set goals to be functionally independent by discharge. Maclean *et al.* (2000) therefore recommended that rehabilitation therapists should have better understanding of how their behavior impacts the patient motivation.

A number of researchers confirmed in their articles the lack of agreement amongst rehabilitation professionals on what constitutes patient motivation: Barry (1965) found that therapists used the term motivation when talking about the patient progress even though there was no clear indication of the meaning; Mclean *et al.* (2000) indicated that there is belief among rehabilitation professionals of the link between patient motivation and rehabilitation outcomes even though there is no common understanding of the term motivation; Lai (2004) stated that despite the lack of consensus by rehabilitation professionals of what constitutes patient motivation, there is belief that motivation plays an important role in rehabilitation outcomes; White *et al.* (2012) stated that although there is the presence of the concept of unmotivated patient there is still no validated instrument to measure motivation in patients with stroke.

Motivation is defined as “mental functions that produce incentive to act; the conscious or unconscious drive for action” (WHO, 2001 page 40). The word motivation is commonly used by the rehabilitation professionals towards the patients (Maclean *et al.,* 2002). Colombo *et al.* (2007) indicated that there is a direct association between motivation and adherence to the rehabilitation programme. This makes it necessary to determine if the word motivation has a similar meaning among the rehabilitation therapists.

To enable therapists to address the patient motivation they need to understand the extrinsic and intrinsic factors that influence the patient motivation level. Extrinsic factors being external motivators like reward and family support. Intrinsic factors being those associated with personal need for functional independence in activities of daily living (ADLs) as well as privacy. Psychologists are of the view that motivation has

different dimensions namely outcome focused motivation Brehm and Self (1989); Locke and Latham, (1990) and process focused motivation Skinner (1979); Locke (1990). This understanding has resulted in development of assessment tools to help ascertain the patient motivation level with view of identifying the source of reduced motivation with the purpose of resolving the issues. There are a few assessment tools available that are concerned with motivation of patients with stroke. Examples of such tools are The Self-Motivation Inventory and the Intrinsic Motivation Inventory Questionnaire. The former measures the motivation to engage in an exercise regime regardless of extrinsic factors whilst the latter focuses on patients' interest, perceived competence and applied effort Plant and Ryan (1985); Deci *et al.* (1994).

Despite the current knowledge that patient motivation in rehabilitation yields positive outcomes Macdonald *et al.* (2013), no papers were identified that explore motivation in stroke rehabilitation. Furthermore, there is strong indication that emotional, cognitive and social factors stand out as factors for motivation that may impact the rehabilitation outcomes Przewoźnik *et al.* (2015). This warranted a study to further investigate the knowledge of motivation as perceived by the rehabilitation therapists to establish common understanding.

This study sought to establish the rehabilitation therapists' understanding of motivation as it is applied during rehabilitation of patients. It also attempted to establish if there was any relationship between patient motivation and rehabilitation outcomes in patients with stroke.

1.2 PROBLEM STATEMENT

It is a well-known fact that patient motivation is a commonly used concept amongst rehabilitation therapists Maclean *et al.* (2002). Rehabilitation therapists acknowledge that there is a relationship between patient motivation and rehabilitation outcomes Colombo (2015). However, there are still no clearly defined guidelines as to what constitutes motivation amongst the rehabilitation therapists' community and thus some

patients may be incorrectly categorized as unmotivated with the possibility of negative impact on their rehabilitation outcomes.

1.3 RESEARCH QUESTION

What is the rehabilitation therapists understanding of a motivated patient in stroke rehabilitation and do they consider there to be a relationship between the rehabilitation outcomes and patient motivation?

1.4 AIMS OF THE STUDY

1.4.1 To establish if the term ("motivated patient") has similar meaning among the stroke rehabilitation therapists and is thus used appropriately

1.4.2 To explore stroke rehabilitation therapists' perception of the relationship between patient motivation and rehabilitation outcomes

1.5 OBJECTIVES OF THE STUDY

1.5.1. To determine stroke rehabilitation therapists understanding of a motivated patient and their knowledge of the various factors that may impact on it

1.5.2. To establish if as such the term motivated patient is used appropriately by the therapists in stroke rehabilitation

1.5.3. To explore the stroke rehabilitation therapists' perception of the relationship between patient motivation and rehabilitation outcomes

1.6 SIGNIFICANCE OF THE STUDY

This study will hopefully bring forth increased awareness to the rehabilitation therapists of their identifying methods of stroke survivors with motivation challenges and the subsequent management thereof. This information might set in motion further investigations on the subject with the focus on maximizing the stroke rehabilitation outcomes.

CHAPTER 2

2. LITERATURE REVIEW

2.1 Introduction

The American Heart Association (AHA) and the American Stroke Association (ASA) in 2013 determined that the stroke is to be defined as the central nervous system infarction of the brain (including intracerebral and subarachnoid haemorrhage not caused by trauma), spinal cord, or retinal cell causing cell death attributable to ischaemia (focal collection of blood within the brain parenchyma or ventricular system) based on neuropathological, neuroimaging, and/or clinical evidence of permanent injury.

They argued that the World Health Organisation's definition for stroke of 1976 relied mainly on clinical symptoms Sacco et al. (2013). They also felt that it did not take into account the in-depth information detailing the extent of injury unveiled by the latest advances in science and technology. They therefore concluded that the WHO definition of stroke was outdated and that the need existed to have it updated. The AHA and ASA went on to invite the relevant experts on the topic to convene and develop a consensus document for an updated stroke definition which was realized in 2013.

In the present time, radiographic imaging tests can confirm if the patient has had a stroke and this also allows clinicians to be able to exclude stroke like diseases or diseases that mimic a stroke. Stroke like diseases are caused by brain tumors, metabolic disorders, infections, traumatic brain injuries, demyelination and intoxication. Computed tomography (CT scan), Magnetic Resonance Imaging (MRI) and ultrasound (Doppler studies) of the cerebral and neck blood vessels are radiographic imaging techniques that are used help us clearly exclude stroke like diseases and further determine if the stroke is of ischemic or hemorrhagic nature as well as establish the location and severity of the lesion.

According to the Heart and Stroke Foundation of South Africa (HSFSA) heart disease and stroke are the biggest killer after HIV/AIDS in South Africa. Most South Africans die of cerebrovascular disease (CVD) than all cancers combined and every hour ten people have stroke Byrne et al. (2016). In South Africa information collected by the Western Cape Rehabilitation Center (WCTC) between 2014 and 2017 and presented by Jenny Hendry, chief executive officer of the center in 2017, indicated that the incidence and prevalence of stroke in the Western Cape was on the increase and still the third leading cause of death Tibæk et al. (2016), Béjot et al. (2016). It was indicated that the number of younger stroke patients between the ages 15 to 40 years had been on the increase in the period between 2014/2015 and 2016/2017 from 26% by 9%. Tibæk et al. (2016) noted in their study that an increase in stroke in patients between the ages 15 and 30years was significantly increasing. Béjot et al. (2016) had similar findings and added that there were other unclear causes of this trend that need further investigation. The causes of this increase was in young patients was attributed to lifestyle changes, hypertension, diabetes, obesity, tobacco and substance abuse as was the case in the cases in the Western Cape.

Almost half of the stroke related deaths globally are said to be preventable as they are due to modifiable risk factors, which are a bigger challenge in middle and lower socioeconomic communities Avan *et al.* (2019). Despite limited data the incidence of stroke in Africa is said to be on the rise and expected to continue with consequent increase in the burden of care Owolabi *et al.* (2015). A study done in Cameroon indicated an increase in stroke patient admissions and fatalities as a result of lack of appropriate stroke care policies, effective management and preventive measures Lekoubou *et al.* (2015). In a study to ascertain the association between socioeconomic status and stroke rehabilitation it was found that in the low income groups the impact of stroke was much higher compared to the middle and higher income groups Addo *et*

al. (2012). In this study, the incidence of stroke, risk factors and mortality was observed to be higher in the low income groups and poorer countries. People in poor countries were less likely to receive evidence based rehabilitation services leading to severe disability Addo *et al.* (2012). In these instances, where younger people often are responsible for supporting the elders the devastation is high. Family members are forced to care for the patient and are unable to continue working. The patient is aware of the burden he brings to the family and may become depressed or despondent with negative effect on his motivation.

In Ghana in a study done in 2017 indicated a lack of standardised stroke care that is in line with the best practice strategies. It highlighted an issue that is common to the low and middle income countries Baatiema *et al.* (2017). A suggestion was therefore made that the governments formulate policies that would give guidance and help advance good quality stroke rehabilitation practices. Realizing the slow progress made in sub-Saharan Africa in making available the rehabilitation facility for post-discharge follow up care, it has also been suggested that home based rehabilitation utilizing family or caregiver would be the route to use Nkoke and Luchuo (2015); Anderson *et al.* (2000).

For this literature review the following search engines were used: Google Scholar, Pubmed, Web of Science and Science direct. The search words used were stroke, motivation, stroke rehabilitation, patient motivation, rehabilitation outcomes. The following literature is presented in this chapter: stroke and its impact on the stroke survivors; the term “motivation” and its use in the rehabilitation setting by the therapists; and possible link between patient motivation and rehabilitation outcomes.

2.2. Impact of stroke on survivors

Due to the damage caused by the stroke to the brain tissue and its magnitude, the patient may suffer to varying degrees from some or all of the following problems viz. cognitive, physical, emotional, communication and personality changes.

2.2.1. Cognitive impairments

Cognitive function is the ability to learn, think, reason, retain memory, be attentive, make decisions and do problem solving Fisher and Chaffee (2019). Cognitive impairment is said to be common following stroke Renjen *et al.* (2015); Sun et al. (2014). Saa *et al.* (2019) indicated that there is between 20% and 80% prevalence of cognitive impairment in stroke survivors. Stroke rehabilitation requires active participation from the patient to be effective. Cognitive impairments post stroke can affect the patient's orientation, ability to recognize their impairment, working memory, understanding of what is expected, ability to focus in goal-directed activities, and ability to learn new things and have cognitive flexibility Saa *et al.* (2019).

2.2.2. Physical impairments

As a result of stroke, its severity and areas of the brain affected, the patient may suffer loss of function of varying degrees which might at times lead to permanent disability Carvallo-Pinto (2016). Physical problems following stroke are commonly associated with muscle tone abnormality and motor impairment with negative impact on balance and physical functional abilities Field *et al.* (2013). Welmer *et al.* (2006) found that eighteen months after stroke spasticity was still affecting movement negatively resulting in limitation of functional ability. Schinwelski *et al.* (2019) also noted that post-stroke spasticity had a major impact on mobility, pain and vitality a year after the onset of stroke.

2.2.3. Emotional problems

Emotional problems are said to be common in stroke survivors and have been noted to have negative impact on the patient's quality of life Kim et al. (2005). Common emotional problems in stroke are depression, post stroke anxiety disorder, post stroke apathy and post stroke emotional lability Kneebone and Lincoln (2012).

Depression may present as depressed mood, ongoing feeling of sadness, loss of energy and poor concentration Kim (2016). Between 5-67% of stroke survivors are thought to suffer from post-stroke depression (PSD) Kim (2016). PSD has been observed to be associated with high mortality rate and has a negative effect on participation in rehabilitation programme, resulting in poor quality of life and outcomes Gillen *et al.* (2001). One of the diagnostic tools used in depression is Montgomery-Asberg Depression Scale Hacket *et al.* (2014). Anxiety disorder is often associated with depression in acute stages Ferro *et al.* (2009), Cumming *et al.* (2015). Anxiety commonly presents with panic attacks and the difficulty in managing excessive worrying Campbell *et al.* (2013). It is more common in acute stroke survivors (Ferro *et al.* 2009) with the prevalence 28% (Cumming et al. 2015). In chronic cases it has been found to have negative impact on social interactions and functional activities.

Apathy post stroke is a more common condition than depression but often occurs in conjunction with depression and cognitive impairment Caeiro *et al.* (2013). Apathy is defined as lack of interest, enthusiasm or concern. It is a result of damage to the prefrontal cortex and basal ganglia Onoda *et al.* (2013). It results in poor goal directed behaviour and therefore impacts the rehabilitation outcomes van Dalen *et al.* (2013). It occurs in between 29- 40.2% of stroke survivors (van Dalen *et al.* 2013).

Stroke survivors may also have emotional lability which is considered as the poor control or inappropriate expression of emotions. It is also called pseudobulbar affect, emotional incontinence, lability of mood or involuntary emotional expression disorder Cummings *et al.* (2006), Kim and Choi-Kwon (2000). Prevalence of emotional lability is between 6-34% (Kim and Choi-Kwon 2000). It is triggered by something funny or not funny and the reaction is inappropriate and exaggerated. It causes the patient a lot of embarrassment leading to withdrawal from social interactions thereby impacting the patient's quality of life Noh *et al.* (2014).

2.2.4. Communication impairment

Communication problems in stroke are common. They occur when the patient suffers stroke on the left brain hemisphere. Communication disorders can present with either aphasia, dysarthria or dyspraxia. This can result in agitation and frustration on the patient due to difficulty in communicating their needs and understanding instructions. Sullivan and Harding (2019) observed that 21.7%of stroke patients with communication problems were vulnerable to falls. O'Halloran *et al.* (2009) found that 88% of the acute stroke patients had one or more communication related impairment. These challenges can lead to avoidance of rehabilitation and further reduced motivation.

Bullier *et al.* (2020) has found that severe aphasia in stroke patients may have a negative impact on quality of life. The communication difficulties caused by stroke may lead to poor motivation to participate in rehabilitation as a result of frustration due to poor understanding or inability to express themselves

2.3. Definition of motivation

Motivation is the word derived from the word 'motive' which means needs, desires, wants or drives within the individuals Cherry and Morin (2020). Motivation is defined as the force that initiates, guides, and maintains goal-oriented behaviours Nevid activation, persistence and intensity Hockenbury and Hockenbury (2010). Activation involves the decision to initiate a specific behaviour, persistence refers to continued effort working towards set goal and intensity is the concentration and the energy applied in pursuing the set goal Zhou and Siu (2015).

According to Maclean *et al.* (2002), motivation is a word commonly used in the rehabilitation setting to describe the stroke survivor's manner and compliance in rehabilitation. Accordingly, a motivated patient takes initiative and is proactive, whilst a passive patient is said to lack/ or have low motivation.

For the purpose of this study "patient motivation" is defined as the drive to persevere with intension to achieve set goals Mayer (2011).

There are two main types of motivation viz. extrinsic and intrinsic motivation Lee *et al.* (2012); Cooper and Jayatilaka (2006); Ryan and Deci (2000).

2.3.1. Extrinsic motivation

Extrinsic motivation is generated by external desires where a person feels compelled to do something or behave in a certain way driven by factors that are outside of their control. It is generated by the need to please others, to avoid punishment and to earn rewards Cooper and Jayatilaka (2006). It is often beneficial in situations where the patient is unable to tap on the intrinsic motivation Ryan and Deci (2000). It has a powerful influence on people in that it helps promote participation and persistence towards completion of the task. Its disadvantage is that it does not have long lasting effects. Some examples of extrinsically motivated behaviour are:

i Incentive or expectation based: states that people will pursuit a certain path drawn by expectation of a reward.

ii Power based: it is based on the need to control and influence others. It is the need to be recognized and afforded respect.

iii Affiliation based: it is motivated by the need to want to belong to a group and be liked.

2.3.2. Intrinsic motivation

The intrinsic motivation is generated from within the individual and is focused on things that are within one's control Lee *et al.* (2012). It is activated by the need to do something that brings one pleasure, and that is important or significant to oneself. Intrinsic motivation is inherent in us and we are born with it. It is a natural tendency and is a critical element for cognitive, social and physical development Ryan and Deci (2000). One of the elements of intrinsic motivation is self-determination, where a person feels highly competent in a certain activity. The other is behaving not from pressure but out of interest to master a topic. In a situation where choices, feelings and opportunities are present, intrinsic motivation is high. Making available choices and opportunities as well as responding to their feelings for self-direction has been

reported to enhance intrinsic motivation to people. This kind of motivation has longer lasting effects on the individual Ryan and Deci (2000). Some examples of intrinsically based behaviour are:

i. Achievement based: it is the action taken to achieve success Atkinson (1974). There is a high need to achieve high challenging goals to ensure success.
ii. Competence motivated: it is driven by the need to be or do better. It is acquired through learning new skills or developing already acquired skills and to overcome obstacles.
iii. Attitude motivated: it is motivated by a profound desire to change oneself and the world. It is crucial in order to achieve one's dreams.

2.4. Factors that impact patient motivation

2.4.1. Cognitive factors

Rehabilitation requires active participation by the patient in order to realise maximum recovery from the effects of stroke. A patient may suffer cognitive impairment due to brain tissue damage caused by stroke Nys *et al.* (2005). Depending on the location and severity of the lesion the patient may suffer from awareness deficit relating to functional impairments Orfei *et al.* (2009). The condition is called anosognosia and the consequences may be devastating. A patient may have difficulty learning new things as well as have poor memory therefore any activities taught during the therapy session may not be carried over outside the therapy setting. A patient may be unable to participate in goalsetting which may reduce the interest in participating in the programme that is set for them Skidmore *et al.* (2010).

2.4.2. Social factors

Family support is an important factor in motivating stroke survivors to engage in physical activities during their recovery Barker and Brauer (2005), Galvin *et al.* (2009). It can be in the form of encouragement or assistance with exercises or the more difficult activities like walking Galvin *et al.* (2009). Yet poor support by the family

associated with reduced self-efficiency can lead to low level of activity and poor outcomes Adeniyi *et al.* (2012).

Support from therapists in increasing patient participation in exercises helps increase their level of activity and is another important factor Shaughnessy *et al.* (2006). Therapists support in promoting self-directed behaviour in physical activities promotes patient motivation Barker and Brauer (2005).

Interaction with other stroke survivors has positive impact on motivation in patients, as it gives an opportunity to share experience about the rehabilitation process with others at different levels of recovery Reed *et al.* (2010). Stroke survivors get motivated by seeing other's achievements and continue working towards their own goals Patterson *et al.* (2009). This helps build hope and eliminate social isolation Reed *et al.* (2010). Stroke survivors get courage in challenging their own perceived limitations of recovery Graham *et al.* (2008).

2.4.3. Environmental factors

It is important that the environment in which rehabilitation occurs is conducive in providing sufficient stimulation to engage Adams et al. (1999). The hospital environment is seen to be controlled by the hospital staff and this gives the patients a sense of disempowerment reducing their level of activity Ada *et al.* (1999). Reduced level of activity is associated with poor participation in rehabilitation and poor motivation. Lack of autonomy can cause the patient to feel uninterested in the activities due to a feeling of not being consulted in the decisions made Holmqvist and Koch (2001), Cant (1997). A good patient-therapist communication is important to ensure clear understanding of expectations. Patients have cited their negative attitudes for rehabilitation as being affected by the manner in which the rehabilitation therapists address them and lack of information regarding the rehabilitation Maclean et al. (2000). Therapists tend to make comparisons among the patients without realising the detrimental effects this may have on patient motivation Maclean *et al.* (2000).

2.4.4. Personal

Patients with higher education, of higher social standing and lifestyle are often driven to perform more than those with lower education and social background Hills and Tippett (2014).

Age

The risk of stroke is known to increase with age Kelly- Hayes (2010). The areas of the brain affected by stroke will determine the functions that will be affected. Cognitive, psychological and emotional impairments are common in older stroke patients. These impairments are often associated with a decrease in initiative and reduced active participation in older patients Rapolienė *et al.* (2018). Kemp (1988) found that the goals of rehabilitation for older adults were different to those of younger patients. Older patients were mainly focused on conservation and therefore needed to engage in activities that would help improve their quality of life. Also if they found rehabilitation too difficult they were easily discouraged and would avoid those tasks. Whilst younger people were achievement driven. Their goals were mainly focused on return to work, education and leisure. Therefore, care should be taken when dealing with older patients that their needs are addressed to keep them motivated in rehabilitation.

Personality

The stroke survivor might suffer frontal lobe damage resulting in personality changes. The pre-existing personality could be exaggerated or they can act out of character. They may also suffer from profound lack of initiative and motivation Caswell, (2018).

Social background

A stroke survivor's adherence to a rehabilitation programme and motivation is greatly impacted by adverse social circumstances. Social circumstances include employment and income, transport and food Mapulanga *et al.* (2014). If any of these in the patient's family are heavily dependent on the patient, their adherence to the programme and motivation may be negatively affected. Family circumstances may be of concern in a

case of depressed patient and where family caring capacity is poor Kobylańska *et al.* (2018). This leads to stress factors causing the patient to lose focus or refuses to participate in therapy with negative impact on the outcomes.

2.4.5 Psychological factor

Psychological problems are common after stroke Whyte and Mulsant (2002); Robinson (2003). They have a negative impact on patient motivation as they cause poor patient participation in rehabilitation and result in poor quality of life Wijenberg *et al.* (2019). Some of the most common psychological problems in patients with stroke are depression, emotional lability and anxiety.

Cognitive

Depression is a common problem in patients with stroke Hackett and Pickles (2014). It causes lack of interest, low energy, poor concentration, poor memory and difficulty in learning new things. These lead to reduced motivation, negatively impact social interactions and patient recovery.

Behavioural

Emotional lability is common in stroke Noh *et al.* (2014). It is also known as Pseudo-bulbar affect or emotional incontinence. This causes exaggerated emotional reactions that usually occurs when presented with a task that is too difficult to perform.

Anxiety

It results in excessive worrying, restlessness and poor concentration. This has a negative impact on motivation and subsequent outcomes. West et al. (2010), Ferro *et al.* (2009).

2.5 The relationship between patient motivation and rehabilitation outcomes

One of the factors that play a role in low patient motivation is exclusion of patients in goal setting. The rehabilitation therapist need to acknowledge patient autonomy whilst

formulating the rehabilitation program to ensure patient cooperation which in turn yields positive rehabilitation outcomes Cardol *et al.* (2002).

Good patient understanding of the rehabilitation process leads to positive attitude in rehabilitation Maclean *et al.* (2000). Therapists should ensure adequate patient education is carried out in a bid to enhance rehabilitation outcomes Rosenfeld (1997). In a study using robotic aided upper limb rehabilitation to enhance motivation and adherence to the programme, done by Colombo *et al.* (2007), it was found that the patients were focused on the tasks and that in the end they had made significant movement gains as well. A study done by Rapolienė *et al.* (2019) found that working on patient's external motivation to encourage participation in rehabilitation, in time stimulated the patient's internal motivation through seeing gradual improvement in their condition. This, in turn, stimulates the internal motivation thereby positively influencing rehabilitation outcomes.

Motivation, but more specifically internal motivation was found to have positive outcomes on learning in patients with schizophrenia, and it was suggested that the results of the study could be applicable to other situations where skills based interventions were necessary to realise positive outcomes Medalia and Saperstein (2011). In the case where there are cognitive impairments as seen post stroke, which results in low attention span, poor memory and reduced ability to process information, external motivation is critical in realising positive functional outcomes Kem *et al.* (2004).

2.6 Conclusion of literature review:

Following a stroke incident, the patient may suffer from reduced motivation to participate in rehabilitation due to the devastating magnitude of the disability. Furthermore, the stroke may manifest with cognitive dysfunction leading to confusion, attention deficit and emotional lability. The cognitive fallout may render the stroke survivor unable to understand instructions, unable to participate in goal setting of their

therapy and often not cooperating with the rehabilitation programme. As a result of the previously mentioned challenges a patient may be labelled as having low motivation. Moreover, it was found that there is a close association between low motivation and depression leading to poor outcome as a consequence of poor participation.

The hemispheric paralysis followed by muscle tone abnormality that results from stroke, may also be associated with sensory dysfunction leading to poor awareness of the affected side. Consequently, the patient may perform activities that could be harmful to them or refuse to participate believing that they have no ability to meet the required performance. In addition, the patient may lose independence in self-care, toileting and mobility. The sudden dependence on others for basic daily living activities may lead to low mood. The patients may experience the rehabilitation program as being too intense as a result of the severity of the disability or age leading to poor participation and consequent poor outcomes.

Therapists should ensure that the therapy environment is stimulating, conducive and supportive to the patient's needs, thereby ensuring full participation of the stroke survivor in the rehabilitation programme and maximising outcomes. Therapists attitudes towards the stroke survivor in the rehabilitation play a big role in keeping patients motivated. Making unfair and unjust comparisons among patients whilst knowing that every patient has different circumstances is not helping patient motivation. Therapists should endeavour to deal with stroke survivors who have suffered communication fallouts sensitively and cautiously as they may lack understanding or experience frustration as a result of impact of communication dysfunction.

The role played by the family and friends of the stroke survivor in the recovery should never be undermined. Lack of support from family and friends may result in the patient feeling isolated and abandoned at the time when they need support and their feelings of vulnerability is high. Moreover, the recovery may be prolonged creating anxiety on

the patient over financial burden. In this event where the reason for poor motivation has not been addressed this will lead to poor rehabilitation outcomes.

Motivation is that which drives people to act or behave in a certain way. Motivation can be driven internally or externally. Whilst internally driven motivation is what therapists should strive for due to the long lasting effects it has on the patient and the fact that it is the patients will, it will help the patient to persist even when the rehabilitation programme gets intense. External motivation can be used with patients who struggle to get started with the hope that once they start realising some recovery their internal motivation will kick-start and carry them to their full potential.

Therapists should utilise their knowledge of factors that influence motivation to help optimize the individual patient's potential for recovery in the rehabilitation programme thereby optimizing the rehabilitation outcomes.

CHAPTER 3

3. METHODOLOGY

3.1 STUDY DESIGN

This was a qualitative research design using semi-structured interviews.

3.2 Study participants

3.2.1 Study population and selection

- The stroke rehabilitation therapists consisted of Speech therapists, Occupational therapists and Physiotherapists.
- Three hospitals were chosen in the Johannesburg and Pretoria area. The hospitals were Charlotte Maxeke Academic hospital, Life Riverfield lodge rehabilitation facility and Eugene Marais rehabilitation hospital. These hospitals included both public and private hospitals.
- Therapists with more than one year of stroke rehabilitation clinical experience in the selected hospitals were invited to participate.
- Purposeful sampling was done to have similar representation of therapists from the three professions viz. Speech therapy, Occupational therapy and Physiotherapy.

3.2.2 Sample size

Therapists that met the inclusion criteria in the three selected hospitals were invited to participate. The homogenous purposive sample strategy was used as the participants had adequate stroke rehabilitation experience and therefore with their knowledge helped bring forth depth to the discussion. The target was 15 or more rehabilitation therapists which is slightly more than the minimum number of participants in a qualitative study (Guest et al. 2006). The total number of therapists that were recruited

from the three hospitals in the three disciplines i.e. physiotherapy, occupational therapy and speech therapy was eighteen.

3.2.3 Inclusion criteria

Therapists with one year or more of work experience in stroke rehabilitation were invited to participate.

3.3 Instrumentation

A demographic questionnaire:

Participant's information was collected regarding their basic qualification, number of years in general clinical practice, number of years in stroke rehabilitation practice and any courses or post graduate studies done before the commencement of the study (see Appendix A). This was done to ensure that the participants met the requirements as set for participation in the study. The answers to the questionnaire indicated that only one participant did not qualify to participate as he had less than one year of work experience. This participant was subsequently withdrawn from participation and his consent cancelled.

3.4 Procedure

3.4.1Pilot study

3.4.1.1 Aim of pilot study

It was to assist in determining if the participants understood the instructions, assess for ambiguity in the questions and sensitivities or embarrassing questions. In essence, it was meant to assist in identifying the presence of flaws and minimise the time wastage for the main study.

3.4.1.2 Method of pilot study

A minimum of one therapist from each profession (i.e. three therapists) was recruited to participate in the pilot study. The participants were handed the consent form advising them of the purpose for the interviews, their role as well as the assurance of their rights in the proceedings. They were given the opportunity to ask questions for

clarity. The questions were found to be appropriate and relevant therefore they were not changed. No clarification was requested as the participants showed good understanding of the questions. The interviews took between thirty to forty-five minutes to complete.

3.4.1.3 The results of the pilot study

The pilot study was carried out smoothly with no problems experienced. The therapists understood the questions and showed a lot of enthusiasm. It was found that the questions were appropriate and relevant, therefore the same questions were carried on to the interviews.

3.4.2 Main study

All the therapists besides the ones that already took part in the pilot study proceeded to participate in the main study. An invitation letter was extended to each one of the rehabilitation therapist. The meeting schedules and venues were confirmed with the participating therapists. Thereafter reminders relating to time and venue of the different hospital meetings were sent by cell phone text message a day before the event to all the participants to ensure prompt attendance. Permission for participation and audio-recording was obtained followed by answering of the demographic questionnaire by the participating therapists before data was collected. The researcher was tasked with asking the questions as well as note taking, whilst the research assistant was responsible for the audio recording and note taking. The interviews took a day to complete in each hospital. It took two months to complete the interviews in all the institutions due to staff availability challenges.

3.5 Data Collection

Individual interviews were conducted using semi- structured open ended questions as a basis for discussion. Participants were allowed to elaborate on their responses in an endeavour to bring forward as much information on the subject as possible. Semi-structured questions had been prepared as a way of guiding the discussion (Appendix

B). The participants were reminded of the use of the voice recorder and assured of the confidentiality of the proceedings.

The researcher was responsible for steering the interview without participating to avoid influencing the answers from the participants. Participants were allowed enough time to express their views but care was taken to prevent deviations from the topic. Interviews were conducted until saturation point was reached.

The information from the interviews was further captured through manual notes by both the researcher and research assistant

At the end of the interview the researcher gave a summary to each participant to ensure that the content of discussion was accurately captured. Voice recordings and hard copies were saved safely in duplicate to ensure that data was not lost. These were further stored in locked storage with limited access.

3.5.1 Data analysis

All the data collected from the interviews was transcribed verbatim. Content analysis was done. Once understanding of the context was established and emergent themes were established. Coding of the key concepts was done by the researcher with the assistance of the research assistant. An inductive approach was used to develop the code structure. Care was taken to ensure that coding had accurately captured the respondents meaning. The existing codes will be refined using a constant comparison method. The code structure was finalised at the point of saturation where new concepts were no longer emerging. Two members of the research team reviewed the data independently checking for discrepancies. Thereafter they met to discuss and settle on the negotiated final codes for all data.

3.6 Ethical considerations

- Ethical clearance was obtained from the University of the Witwatersrand Ethics Committee for Research on Human Subjects number: M180286.
- Upon receiving the University permission to conduct the research the different hospital that were selected for participation were then contacted in order to acquire their respective site permission.
- Permission was obtained from the authorities at Charlotte Maxeke Academic Hospital, Life Health head office on behalf of Riverfield Lodge Life rehabilitation and Eugene Marais Life rehabilitation hospitals.
- Potential participants were identified, contacted and informed of the research and its purpose as well as their ethical rights. Once the participants that agreed to participate had been identified they were informed of the research, their role in the study their rights in the research process. Once it was established that the participants had full understanding of their roles and rights they were requested to sign the relevant documents stating their agreement to participate on the relevant appendices.

The following is the list of appendices:

Appendix A – demographic questionnaire

Appendix B – schedule of interview questions

Appendix C – information sheet

Appendix D – letter seeking permission to participate in the study

Appendix E – consent form to participate in the study

Appendix F – consent form to participate in audio-recorded study

Appendix G – ethics clearance certificate

CHAPTER 4

4. RESULTS

4.1 Introduction

The objectives of this study were: to determine the stroke rehabilitation therapists understanding of a motivated patient and their knowledge of the various factors that may impact on it; to determine if as such the term motivated patient is used appropriately by the therapists in stroke; and to explore the stroke rehabilitation therapists' perception of the relationship between patient motivation and rehabilitation outcomes. This was a qualitative research design using semi-structured interviews and open-ended questions. The results are presented in this chapter.

4.2 Demographic profile of study participants

Eighteen participants were recruited from the participating institutions but only seventeen met the inclusion criteria of being involved in stroke rehabilitation for a year or more. Of the participants six were speech therapists (ST), six were occupational therapists (OT) and five were physiotherapists (PT). Seventeen stroke rehabilitation therapists (SRT) participated in the study. All the therapists had actively participated in short courses relating to stroke rehabilitation over the years but none of them had any postgraduate qualification in rehabilitation

In Figure 4.1 information about the rehabilitation therapists is tabulated according to the general experience in their different disciplines.

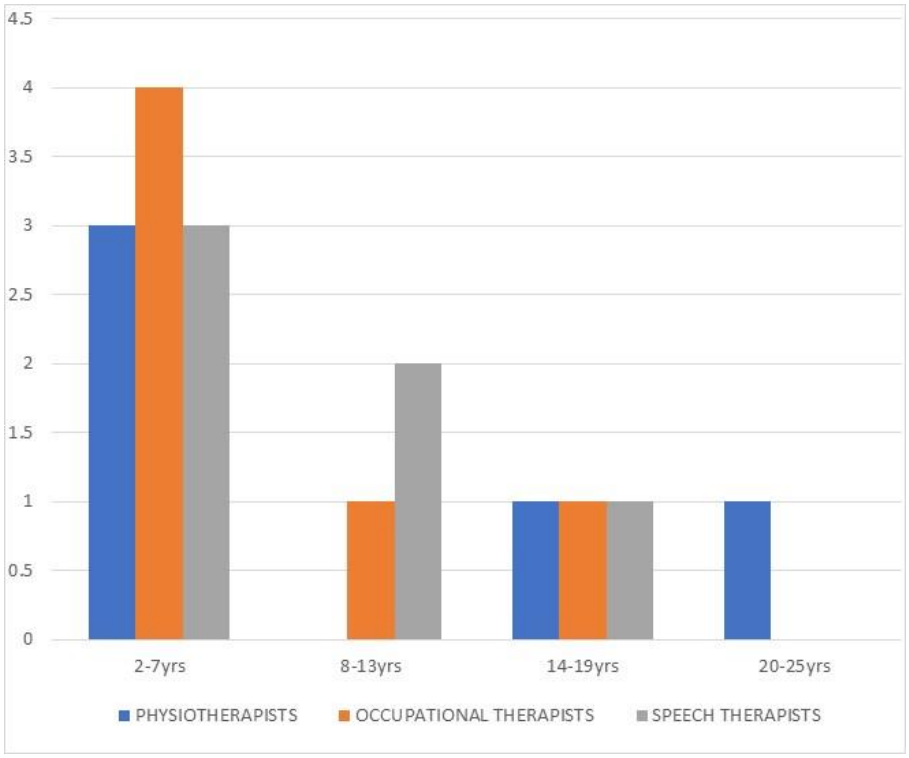


Figure 4.1 Stroke rehabilitation therapists' years of experience (n = 17)

Most of the participants had less than eight years' experience.

4.3. The stroke rehabilitation therapists' understanding of motivated patient

The categories that emerged from the interviews on rehabilitation therapists understanding of patient motivation in stroke rehabilitation and items that were used to formulate these categories are presented in Table 4.1

Table 4.1: The stroke rehabilitation therapists' understanding of motivated patient

Categories	Items
1. Compliance to therapy	a. Give the best to achieve good results
	b. Willingness to cooperate

2. Ability to engage	a. Will and drive b. The patient's state and ability to partake c. Cognition and fatigue to be eliminated
3. Willingness to participate	a. The will to participate to reach goals b. Have to understand what rehabilitation is about c. It is a push within to get better

Compliance to therapy

The rehabilitation therapists believed that the patients that complied with the rehabilitation team's program were motivated. This is confirmed in the response of participant S001M "…if patient is motivated he/ she will be compliant to therapy and the rehabilitation program", participant S017E "…the patient gives their best so that they can achieve the best results in therapy," and participant P013M "…it is the willingness to cooperate with the rehabilitation and healthcare professionals."

Ability to engage

Participants noted the motivated stroke patients as those that showed the ability to engage in the therapy programme indicated by the following participants responses: participant OT002M "…the will and drive to be able to participate in rehabilitation activities to get better."; Participant S006R "…it is more about the patient's state and ability to partake in the rehabilitation process."; participant OT012R "…the willingness to engage, to take feedback when they struggle to work through the program and still be excited for therapy.", participant P013M "… be willing to cooperate with the rehabilitation and healthcare staff"; participant OT007R "…when the patient shows the ability to engage and participate in functional activities in a positive way. However, motivation should be separated from cognitive factors and fatigue." Rehabilitation therapists also identified motivation as the will to reach goals, participant OT008R "… for the patient to participate to reach goals and get to where they want to see

themselves at the end of rehabilitation", participant P011R "…the desire to want to do something to achieve goals and the push within to get better". However, they also felt that patients should understand why they are in rehabilitation and what is expected of them as this increases motivation, participant P004R "…but obviously you have to understand why you are in the rehabilitation program in the first place and what is expected of you and the team around you that is supporting you."

4.4 Knowledge of the various factors that may impact patient motivation

The rehabilitation therapists identified several factors they considered to have impact on the patient motivation. These are reflected in Table 4.2

Table 4.2. The knowledge of the various factors that may impact on patient motivation

Categories	Items
1. Cognitive difficulties	a. Mental and emotional issues
	b. Communication difficulties
2. Acceptance of the condition	a. Non- acceptance of condition reduces motivation
	b. Must have insight into their problems
	c. Must see need to improve himself
3. Family and social circumstances	a. Family expectations on recovery
	b. Family support
	c. Social difficulties causing distractions
4. Therapist's attitudes	a. Lack of empathy
	b. Undue pressure to the patients
5. Patient's character prior to stroke	a. Premorbid patient behaviour

Cognitive difficulties

The therapists determined that mental, emotional and speech dysfunction were contributing factors that negatively impacted the patient motivation. Participant S006R

asserts that "… a person who has a stroke, of course, there is going to be some knock in your mental, in your emotional state". Participants were concerned about the extent of understanding in stroke patients that had suffered from speech impairment. Their concern was that of insufficient understanding as shown in participant S009R response "…we look at the receptive language to determine how much they understand". In the case where a patient is suffering from anosognosia the concern was of the patient not understanding the impact of their condition. Participant S010R "…. Patient not aware of their difficulties."

Acceptance of the condition

Patients may be in denial and refuse to accept that they have suffered a stroke resulting in refusal to participate in the rehabilitation program. Participant P013M states that "…you need to be mindful of the patient's position. You cannot expect someone to be motivated when they have not accepted their condition." Whilst Participant OT008R states "…if the patient does not see reason to help himself, he will not improve," and Participant S009R revealed that "… with good insight to their problems the patient will cooperate."

Family and social circumstances

Families may expect that the patient will make full recovery from the stroke causing the patient to lose motivation. This is shown in the response of participant P013M "…family input and expectation may cause the patient to lose motivation when they are not able to achieve this." Family support is very important to the patient as he will depend on them upon discharge. Lack of family support may lead to patient loosing hope and not see the point of recovering. This is demonstrated in participant S009R response "…sometimes a patient that was participating well in therapy suddenly refuses to cooperate after he had family members visiting and it is because something was said that makes him want to stay in hospital longer." When a stroke patient has social problems they get distracted and find it difficult to focus on the rehabilitation

program, participant P003M states that “patients come with social problems, they get demotivated as their mind is back at home trying to figure out what to do.”

Therapists’ attitudes

Therapist are often seen to be lacking empathy towards the stroke survivors, participant P003M states “…patients can sense attitude. Therapists tend to ignore patients’ feelings and focus on what they want to achieve, whereas it is not about them but the patient.” Therapists should express more warmth towards the patients and express understanding as the patient’s focus may be drawn away by family circumstances. Participant S006R says “…. motivation may be influenced by mental, emotional and socio-economic factors.” Therapists should refrain from putting too much pressure on the patient but rather try and explore their expectations. Participant S001M states “…. Ask the patient why they come to therapy and not just because the doctor says so.”

Patient’s character prior to stroke

The patient’ character before the stroke may have an influence on how he will behave after suffering from the stroke. This information may be important to the therapist in cases where the patient has motivation difficulties. Participant OT018E sheds light on this in the following “…we should consider how the patient was before the stroke. Things may be from his childhood, family situation or workplace. These things may add up to how he will be in the rehabilitation.”

4.5 Use of the term “motivation” by the rehabilitation therapists.

The majority of the therapists agreed that the term “motivation” was commonly used in the rehabilitation setting particularly when referring to the patients with low motivation. This was as a result of the patients’ behaviour that was contrary to the purpose of the rehabilitation program. Table 4.3 indicates the patient behaviour observed by the therapists was used to decide if a patient is motivated or not.

Table 4.3 Use of the term "motivation" by the rehabilitation therapists

Categories	Items
1. Withdrawal from participation	a. Repeated refusal to attend therapy
	b. Possible perception of difficult task
	c. Refusal to participate with different therapists
2. Lack of understanding	a. Receptive language fallout
	b. General understanding

Withdrawal from participation

The rehabilitation therapists noted the attempt to withdraw from the programme by the stroke patients using different excuses even after attempts to resolve the excuses. This presented with repeated refusal to attend therapy by some the stroke patients. This is indicated by participant P004R "…when they refuse therapy more than once and having all these type of excuses, which to us therapists are not necessarily valid enough reasons". Also when the patient refuses therapy with more than one therapist, participant OT005R "…when different therapists working with one patient discover that the patient is not motivated we have to find out why he is not participating so that we can find a strategy to help him participate." They also noted what they perceived to be the patient fear of failure and this is noted in participant OT008R's "…if every day the patient says I cannot do this, I cannot participate in these activities and most of the time he says he has a headache even after he has been given medication." This is then brought to the attention of the multidisciplinary team for discussion. The majority of the rehabilitation therapists felt they were using the term "motivation" appropriately.

Lack of understanding

Two of the participants indicated that they did use the term motivation in rehabilitation. They felt that the patients' behaviour was due to lack of general understanding of what rehabilitation was about. They focused on giving trust and hope as indicated by this quote from one of the participants, participant P003M "…we try and give them hope to trust us to help them, so that we can work together to get them better." Patients that

suffered from speech impairment were likely to have receptive language deficit that would affect their understanding as indicated by participant S009R "… we do not really look at motivation we describe it as insight. How well do they see insight into their problems, can they see that they have speech problems, mobility problems or how well do they participate in the rehabilitation program."

4.6 The rehabilitation therapists' perception of a relationship between patient motivation and rehabilitation outcomes

The rehabilitation therapists were all of the opinion that motivation played a big role in realising rehabilitation goals. The general feeling was that patients showed recovery to varying degrees once they were motivated and started to actively engage in the programme. Table 4.4 sheds light on the rehabilitation therapists' opinions.

Table 4.4 The rehabilitation therapists' perception of a relationship between patient motivation and rehabilitation outcomes

Category	Items
Motivation key to rehabilitation outcomes	a. Improved participation in activities b. Participation in goal setting c. Good potential of recovery may not be realised if not motivated

The rehabilitation therapists believed that motivation was a huge factor in reaching rehabilitation goals. This we see in the participant's responses. Participant P003M "…a demotivated patient cannot achieve anything", S006R "...increased patient motivation leads to improved rehabilitation outcomes", participant PO11R "…if the patient has no desire to get better the therapist is limited in what they can do", participant S015M "…you have to get them involved in the goal setting to optimize rehabilitation outcome", participant OT18E " without motivation the patient can have all the physical attributes going for them, but if not motivated the outcome is poorer than a motivated

patient”, They believed that having a good potential for recovery will not lead to improved rehabilitation outcomes if the patient has low motivation.

CHAPTER 5

DISCUSSION

5.1 Introduction

The aim of the study was to establish if stroke rehabilitation therapists had similar understanding when using the term “patient motivation” and whether it was used appropriately. It also explored if they perceived there to be any relationship between a motivated patient and the rehabilitation outcomes. The results of this study are discussed in this chapter.

Seventeen therapists participated in the study. They were recruited from three rehabilitation hospitals from the Gauteng province in South Africa. The therapists were from three different disciplines viz. physiotherapy (PT), occupational therapy (OT) and speech therapy (ST). Two of the hospital are private (independent) hospitals and one is a state academic hospital. They are all situated in the urban areas in Gauteng.

None of the participants had postgraduate qualification but all of them had attended courses in their relevant disciplines to keep up to date with ongoing education.

5.2 The stroke rehabilitation therapists’ understanding of patient motivation.

The rehabilitation therapists indicated that a motivated patient was the one who is compliant to the rehabilitation staff and willingly engage as well as participate in the rehabilitation program.

This ties in with the findings from the literature of Maclean et al. (2002) as they describe a motivated patient by their manner and compliance to rehabilitation. Kennedy (2010) defines motivation as the level of persistence, whilst Mayer (2011) believes it is to have an internal state that initiates and maintains goal directed behaviour. All in all, motivation is associated with action driven behaviour.

The rehabilitation therapists acknowledged the impact of stroke survivor's associated impairments such as poor cognitive ability which may include denial of impairment. Denial of illness in stroke is said to be associated with cognitive and sensory loss (Levine et al. 1991). The patient loses awareness of their disability and refuse to participate in rehabilitation and this may be interpreted as a demotivated patient if the exact reason for poor participation is not identified.

The speech therapists raised the challenges they faced with stroke survivors who have suffered communication difficulties whether it is receptive, expressive speech difficulties or both as it impacted patient motivation negatively. Aghabarari et al. (2009) found that effective communication skills between health professionals and patient impacted the patient's training positively, hence increase compliance and cooperation. Furthermore, aphasia was also associated with poor functional outcomes (Boehme et al. 2016).

5.3 The knowledge of the factors that may impact the patient motivation.

The rehabilitation therapists identified a number of factors they deemed to be affecting the stroke patient motivation as the following:

a) Cognitive impairments resulting in mental, emotional and communication problems

The therapists indicated that the area of the brain affected may lead to varying degrees of cognitive impairments. They also mentioned communication challenges with specific reference to receptive language noting that the patient will have difficulty understanding what is being said to them and this may affect their motivation to participate in rehabilitation activities.

Cognitive problems are common in stroke survivors (Kim and Choi 2000). The link between communication and motivation was also established by Gillen et al (2001)

and Pickrell et al. (2016) who stated that cognitive dysfunction can affect levels of motivation in rehabilitation (Zielińska et al. 2015).

b) Lack of acceptance of their condition

The therapists were of the opinion that a patient who has not accepted his condition, who lacks insight into their problems and who does not see reason to improve themselves cannot be expected to be motivated for rehabilitation. These patients often participate less in the rehabilitation program. For some this is due to the brain lesion, social standing in society or denial associated with age.

Orfei *et al.* (2009) noted that anosognosia, a condition found in stroke, that presents with awareness deficit of functional impairments has detrimental effects on recovery and quality of life. Similarly, Kortte and Wegener (2004) described the lack of awareness and insight into one's condition resulting from neurological condition known as anosognosia. He observed its negative impact on patient motivation to participate in activities as they lacked understanding of their deficits.

c) Poor family and friends support often results in low patient motivation, with reduced interest in cooperating with the rehabilitation programme.

The patient- family relationship was noted to be very important during the rehabilitation stage, as the family was the support system for the patient that could either help boost motivation through encouragement whilst recovering or dampen patient motivation if they are too critical towards the patient. The family and friends were noted to have more influence on the patient compared to the rehabilitation therapist and that the rehabilitation therapists had limited influence on the patient's compliance to the rehabilitation program.

In-line with the research findings, Pickerell et al. (2016) found that the positive factors that affected stroke patient motivation in stroke rehabilitation was good family and

friends support, this was demonstrated by improvement in mobility. Glass et al. (1993) also demonstrated that improving family support had a positive influence on rehabilitation outcomes.

d) Rehabilitation therapists' attitudes towards the patients

Therapists also identified rehabilitation professional's attitudes towards patients that were contrary to the purpose of the rehabilitation goals. They noted that patients were often sensitive to adverse rehabilitation professional's attitude towards them. Patients were left in the dark and not consulted regarding the rehabilitation. The programme was tailor maid without consultation of the patient.

This finding is similar to the one established in a systematic review of patient's experiences in rehabilitation which showed that patients were unhappy about lack of communication by the therapist and not being allowed autonomy in their rehabilitation programme (Luker et al. 2014). The study participants felt that better communication should be forged by rehabilitation therapists in order to realize maximal patient motivation in rehabilitation.

e) Realisation of recovery increases motivation.

Stroke patients were observed to have a positive attitude towards rehabilitation once they realised some recovery from the disability. They showed increased initiative and engaged even more. Rapoliené et al. (2018) also had similar findings in their study it showed that even though the patient's internal motivation was low, as the patient starts recovering the internal motivation also increases and overcomes external motivation.

f) Poor social circumstances as negatively impacting motivation.

Negative social circumstances were noted to be a source of distraction for the patient as they would be worrying about the family struggles whilst lying in hospital and cannot be of any help. Stroke is known to impact the lower income groups more severely than the middle and higher income group (Addo et al. 2012). Family members often become

primary caregivers. Often the stroke patient will suffer from depression as a result of these social challenges leading to poor motivation in rehabilitation.

g) Negative behaviour associated with premorbid issues.

Patient premorbid behaviour was thought to be something to look into in those patients that proved difficult to stay motivated as there could be issues in the patient's past that could be the cause. Therapists felt that there are some issues in patient's childhood, family life or work place situations that could lead to challenging behaviour in patients.

Greenop et al. (2009) found that premorbid neurotic personality trait and oppositional behaviour was often related to irritability and agitation post stroke. These types of behaviour can frequently be traced to premorbid behaviour and without proper management are bound to have negative impact on patient motivation.

5.4 Appropriateness of the use of the term "motivated patient."

The majority of the rehabilitation therapist confirmed that indeed the term "motivation" was used a lot by the rehabilitation therapists, particularly when referring to the patients with low motivation. They also felt that they were using it appropriately as they based it on patient's negative behaviour towards rehabilitation. They felt that the avoidance tactics used by the patients were aimed at not adhering to the rehabilitation programme. Maclean et al. (2000) indicated that rehabilitation therapists continue to use the term motivation on stroke patients but feels it should be used cautiously as it can be misused.

5.5 The perceived relationship between patient motivation and rehabilitation outcomes.

There was consensus among the rehabilitation therapists with regards to the importance of patient motivation as means of realising rehabilitation goals. They indicated that the success of rehabilitation was wholly dependent on active patient

participation in the rehabilitation programme. This they also related to those patients who were deemed to have a good potential for functional recovery and yet yielded poor outcomes as being attributed to low motivation. They were of the opinion that patients deemed to have good potential for recovery would still need to be motivated to participate in the rehabilitation programme, in order to realise the full potential in rehabilitation outcomes.

On the other hand, the patients with low motivation were likely to show poor participation in the rehabilitation programme resulting in poor outcomes. This in turn would result in poor quality of life and post stroke depression. Rapolienė et al (2018) showed that there was direct relationship between patient motivation and rehabilitation outcomes as shown in this study. Wormack (2012) suggested that supporting the patient's autonomy in prioritising personally meaningful goals will improve motivation thereby contributing to improved treatment outcomes.

CHAPTER 6

6. Conclusion

The rehabilitation therapists seem to agree on the determination of a motivated patient as they state it to be the one that show ability and willingness as well as compliance towards the rehabilitation program. Those patients that display negative manner towards the rehabilitation program and are unwilling to participate are therefore said to be have low motivation. The rehabilitation therapists also agree that the word “motivation” is used a lot with regards to the stroke patients, relating to their behaviour towards the rehabilitation program.

Patients are said to have low motivation when they carry themselves in a negative way by refusing to participate in the rehabilitation program, not cooperating with some rehabilitation therapists always find ways of avoiding to attend therapy sessions. They acknowledged the causes of lack of motivation as being associated with various reasons. These reasons could be the result of cognitive dysfunction due to neurological changes in the brain caused by the stroke, lack of or excessive family and friend’s support, not being afforded autonomy by the rehabilitation team and the general therapists’ attitudes towards them.

There is general consensus by the therapists on the appropriateness of the use of the term “motivation” and the fact that low motivation leads to decreased participation by the patient in the rehabilitation programme. This may in part be due to impaired communication skills or cognitive fallout. It is suggested that therapists need to pay attention to these factors, to enable them to support the stroke patients in staying motivated thereby optimizing the rehabilitation outcomes.

The rehabilitation therapists also agree that a direct relationship exists between a motivated patient and rehabilitation outcomes. Those patients that cooperate with the rehabilitation therapists, follow the programme, attend therapy sessions, have a good family support tend show good outcomes.

CHAPTER 7

7.1 Limitations

- Study was done in only three of the institutions that provide formal stroke rehabilitation in Gauteng province. Limiting generalizability within the province.
- The third hospital is an academic hospital with a high turnover of stroke survivors. The therapists do not get sufficient opportunity to explore the patient motivation status because of the early discharge of the patients. Therefore, their knowledge is only confined to the early stages of stroke.

7.2 Recommendations:

Therapists are well advised to monitor their patients closely and identify timeously those at risk of low motivation. This will help with effective utilization of rehabilitation time.

Rehabilitation therapists should be mindful of the importance of the role played by the family and friends in maintaining stroke patient motivation with view to including them in the rehabilitation program.

7.2.1 Future recommendations:

It is highly recommended that more research be done in the future around this topic to include more rehabilitation hospitals, as only three hospitals participated in this study as well as establish if these results are representative of the broader therapy community.

REFERENCES

Ada L, Mackey F, Heard R, Adams R. 1999. Stroke rehabilitation: does the therapy area provide a physical challenge? Australian Journal of Physiotherapy, 45:33–38.

Adams HP, Davis PH, Leira EC, Chang KC, Bendixen BH, Clarke WR, Woolson RF, Hansen MD, 1999**.** Baseline NIH Stroke Scale score strongly predicts outcome after stroke A report of the Trial of Org 10172 in Acute Stroke Treatment (TOAST). Neurology Jul 1999, 53 (1) 126: DOI: 10.1212/WNL.53.1.126

Adeniyi AF, Idowu OA, Ogwumike OO, Adeniyi CY, 2012. Comparative influence of self-efficacy, social support and perceived barriers on low physical activity development in patients with type 2 diabetes, hypertension or stroke. Ethiopian journal of health sciences

Addo J, Ayerbe L, Keerthi M. 2012. Stroke. 43:1186- 1191. doi.org/10.1161/STROKE AHA.111639732

Aghabarari M, Mohammadi I, Varvani-Farahani A. 2009. Barriers to Application of Communication Skills by Nurses in Nurse-Patient Interaction. Nurses and Patients' Perspective. Iranian Journal of Nursin, 22(16):19–31

Agho AO, John EB. 2017. Occupational therapy and physiotherapy education and workforce in Anglophone sub-Saharan Africa countries. Hum Resour Health 15, 37

American Stroke Association, 2018. Emotional & Behavioral Effects of Stroke. Reviewed November 21, 2018.

Anderson C, Mhurchu CN, Rubenach S, Clark M, Spencer C, Winsor A. 2000. Home or hospital for stroke Rehabilitation? Results of a randomized controlled trial: II: cost minimization analysis at 6 months. Stroke. 2000 May; 31(5):1032-7.

Atkinson RC, Herrmann DJ, Wescourt KT, Solso RL 1974. Theories in cognitive psychology: The Loyola Symposium VH Winston, Washington, DC.

Avan, A., Digaleh, H., Di Napoli, M. et al.,2019. Socioeconomic status and stroke incidence, prevalence, mortality, and worldwide burden: an ecological analysis from the Global Burden of Disease Study 2017. *BMC Med* **17,** 191 (2019). doi.org/10.1186/s12916-019-1397-3

BaatiemaL, Chan CKY, Sav A, Somerset S, 2017. Syst. Rev. 6(1):213. doi.10.1186/s13643-017-0594-4

Béjot Y, Delpont B, Giraud M. 2016. Rising Stroke Incidence in Young Adults: More Epidemiological Evidence, More Questions to be Answered. J Am Heart Assoc.

Brehm JW,Self EA, 1989. Intensity of Motivation. Annual Review of Psychology 1989: 40(1), 109- 131.

Byrne J, Eksteen RD, Crickmore C, 2016. Heart Stroke Foundation of South Africa.

Campbell Burton CA, Murray J, Holmes J, Astin F, Greenwood D, Knapp P, 2013. Frequency of anxiety after stroke: a systematic review and meta-analysis of observational studies. ***Int J*** Stroke; 8(7):545-59.

Caiero L, Ferro JM,Costa J, 2013. Apathy Secondary to Stroke: A Systematic review and Meta-Analysis. doi.org/10.159/000346076.

Colombo, R., Pisano, F., Mazzone, A., Delconte, C., Micera, S., Carrozza, M. C., Dario, P., & Minuco, G. 2007. Design strategies to improve patient motivation during robot-aided rehabilitation. *Journal of NeuroEngineering and Rehabilitation*, *4*, [3].

Colombo M, 2015. Social motivation in computational neuroscience. British Journal for Philosophy of Science, 10: 1093.

Cummings JL, Arciniegas DB, Brooks BR, Hemdon RM ET *et al.* 2006. Defining and diagnosing involuntary emotional expression disorder. CNS Spectr 11(S6):1-7.

Deci, E. L., Eghrari, H., Patrick, B. C., & Leone, D. 1994. Facilitating internalization: The self-determination theory perspective. *Journal of Personality*, *62*, 119-142.

Feldman, M. S, 1995. Strategies for Interpreting Qualitative Data. Thousand Oaks, CA: Sage Publication.

Ferro JM, Caeioro L, Santos C, 2009. Post-stroke emotional and behavior impairment: a narrative review. Cerebrovasc Dis. 27 Suppl: 197- 203.

Field MJ, Gebruers N, Sundaram TS, Nicholson S, Mead G. 2013. Physical Activity after Stroke: A Systematic Review and Meta-Analysis. doi.org/10.1155

Galvin R., Cusack T., and Stokes E., 2009. To what extent are family members and friends involved in physiotherapy and the delivery of exercises to people with stroke. *Disability and Rehabilitation*, vol. 31, no. 11, pp. 898–905, 2009

Greenop K, Almeida O, Hankey G, Bockxmeer F, Lautenschlager N. 2009.
Premorbid personality traits are associated with post-stroke behavioral and psychological symptoms: A three-month follow-up study in Perth, Western Australia. International psychogeriatrics / IPA. 21. 1063-71. 10.1017/S1041610209990457.

Glass TA, Matchar DB, Belyea M, Feussner JR, 1993. Impact of social support on outcomes in the first stroke. Stroke. 1993: 24:64- 70. Doi.org/10.1161/01STR.

Guest G, Bunce A, Johnson L, 2006. How many interviews are enough? An experiment with data saturation variability. Field Method 18 (1): 24 doi 10.1177/1525822x05279903

Hillis, A. E., & Tippett, D. C. 2014. Stroke Recovery: Surprising Influences and Residual Consequences. *Advances in medicine*, *2014*, 378263.

Holmqvist, L.W., Koch, L, 2001. Environmental factors in stroke rehabilitation: Being in hospital itself demotivates patients. British Medical Journal 322, 1501 (2001).

Kim JS, Choi-Kwon S, Kwon SU, Lee HJ, Park KA, Seo YS, 2005. Factors affecting the quality of life after ischemic stroke: young versus old patients.
J Clin Neurol. 2005 Apr; 1(1):59-68.

Kneebone II, Lincoln NB, 2012. Psychological Problems after Stroke and Their Management: State of Knowledge. Neuroscience and Medicine, vol3 no1

Kobylańska, Marzena et al. 2018.'The Role of Biopsychosocial Factors in the Rehabilitation Process of Individuals with a Stroke'. 1 Jan. 2018: 523 – 535.

Kortte KB, Wegener ST., 2004. Denial of illness in medical rehabilitation populations: theory, research and definition. Rehabil Psychol. 2004; 49:187–199.

Lai C.H, 2004. Motivation in hand-injured patients with and without work-related injury. Journal of American Society of Hand Therapy, 17; 6-17.

Locke E. A, Latham G.P, 1990. A theory of goal setting and task performance. Englewood Cliffs, NJ: Prentice-Hall.

Lekoubou A, Nkoke C, Dzudie A, Kengne AP, 2015. Recurrent stroke and early mortality in an urban medical unit in Cameroon. J Stroke Cerebrovas Dis, 26(8):1689-1695. Doi. 10.1016/j.jstrokecerebrovasdis.2017.03.031

MacDonald H, Sulsky L, Jefrrey R, 2013. Cultural differences in motivation to seek performance feedback: A comparative policy- capturing study.

Maclean N, Pound P, Wolfe C, Rudd A., 2002. The concept of patient motivation: a qualitative analysis of stroke professionals' attitudes. Stroke. 2002; 33:444–8

Maclean N, Pound P, Wolfe C, Rudd A, 2000. A qualitative analysis of stroke patients' motivation for rehabilitation. BMJ. 321:1051–1054.

Maclean N, Pound P, 2000. A critical review of the concept of patient motivation in the literature on physical rehabilitation. Soc Sci Med. 50: 495–506.

Mapulanga M, Nzala S, Mweemba C, 2014. The Socio-economic Impact of Stroke on Household Livingstone District, Zambia: A Cross-sectional Study. Annals of Medical and Health Sciences research 4S123-7.10.4103/2141-9208.13080.

Marshall MN, 1996. Sampling for qualitative research. Family practice 13: 522-525.

Mayer EA, 2011. Gut feelings: The emerging biology of gut-brain communication. Nat Rev Neurosci 12(8):453-66. Doi. 10.1038/nrn3071

Medalia A, Saperstein A. 2011. The role of motivation for treatment success. *Schizophr Bull*. 2011;37 Suppl 2(Suppl 2): S122–S128. doi:10.1093/schbul/sbr063

Nkoke C, Luchuo EB, 2015. Post stroke care: An alternative model to reduce stroke related morbidity in Sub-Saharan Africa. Annals of Translation Medicine, Vol3, no16.

Noh SM, Chung SJ, Kim KK, Kay DW, Lim YM, Kwon SU, Kim JS, 2014. Emotional disturbance in CADASIL: its impact on quality of life and caregiver burden. Cerebrovascular Dis 37(3): 188- 94.

Nys GMS, van Zandvoort MJE, de Kort PLM, Jansen BPW, 2005. Early Depressive symptoms after stroke, 2005. J. Neurol Sci Jan12; 228(1):27- 33.

Olowabi M, Olowoyo P, Popoola F *et al.* 2018. The epidemiology of stroke in Africa: A systematic review of existing methods and new approaches. *Journal of Clinical Hypertension (Greenwich Conn), 20(1). 47- 55.*

Orfei MD, Caltagirone c, Spalletta G. 2009. The evaluation of anosgognosia in stroke patients. CVD (Basel, Switzerland), 27(3) 280-289.

Paolucci S, Antonucci G, Pratesi L, Traballesi M, Grasso M, Lubich S. 1999. Poststroke depression and its role in rehabilitation of inpatients. Arch Phys Med Rehabil. 1999; 80(9):985–990

Plant, R. W., & Ryan, R. M. 1985. Intrinsic motivation and the effects of self-consciousness, self-awareness, and ego-involvement: An investigation of internally-controlling styles. *Journal of Personality*, *53*, 435-449.

Pickrell M, Bongers B, van den Hoven E, 2016. Understanding Changes in the Stroke Patients Undergoing Rehabilitation in Hospital. Persuasive Technology ISBN doi.10.1007/978-3-319-3159-6-22.

PohjasvaaraT, Vatara R, Leppävuori A *et al*., 2001. Depression is an independent predictor of poor long-term functional outcomes post-stroke. European Journal of Neurology. Doi.org/10.1046/j.1468- 1331.2001.00182x

Przewoźnik DA, Rajtar-Zembaty A, Starowicz-Filip A, 2015. The influence of cognitive, emotional and social factors on motivation for rehabilitation in patients after stroke.

Pyae A, Luimula M, Smed J, 2014. Understanding stroke patient's motivation- driven rehabilitative game design. International Internet of Things Summit. Pp. 99-111.

Ramirez L, Kim-Tenser MA, Sanissian N, *et al.* 2016. Trends in acute ischemic stroke hospitalization in the United States. J Am Heart Assoc

Rapoliené J, Endzelyte E, Jasevičiene I, 2018. Stroke patient motivation Influence on the Effectiveness of Occupational Therapy. Rehabilitation and Research Practice doi.org, 10. 1155/9367942.

Reed M, Harrington R, Duggan A, and Wood VA, 2010. Meeting stroke survivors perceived needs: a qualitative study of a community-based exercise and education scheme," *Clinical Rehabilitation*, vol. 24, no. 1, pp. 16–25

Resnick, B *et al.* 1998. Use of the Apathy Evaluation Scale as a Measure of Motivation in Elderly People.

Rist PM, Chalmers J, Arima H, *et.al.* 2013. Baseline cognitive function, recurrent stroke, and risk of dementia in patients with stroke. *Stroke. 2013 Jul; 44(7):1790-5.*

Ryan G and Bernard H, 2003. Techniques to identify themes. Field methods 15(1-8). 191.

Ryan, R. M., Koestner, R., & Deci, E. L. 1991. Varied forms of persistence: When free-choice behavior is not intrinsically motivated. *Motivation and Emotion*, *15*, 185-205.

Sacco RL, Kasner SE, Broderick JP, Caplan LR, 2013. An updated definition of stroke for the 21st Century: A statement for Healthcare professionals from the AHA/ASA. Stroke. 2013 Jul; 44(7):2064-89

Shaughnessy M, Resnick BM, Macko RF, 2006.Testing a model of post-stroke exercise behaviour. Rehabilitation Nursing. doi.org/10.1002/j.2048-7940.2006

Sreedhan SE, Unnikrishnan JP, Amal MG, Shibi BS. Sarma S, Sylaja PN, 2013. Employment status, social function decline and caregiver burden among stroke survivors. A South Indian Study. doi.org/10/1016/jns.2013.06.026

Sullivan R. & Harding K. 2019. Do patients with severe post-stroke communication difficulties have a higher incidence of falls during inpatient rehabilitation? A retrospective cohort study, Topics in Stroke Rehabilitation, 26:4, 288-293

Sun JH, Tan L, Yu JT, 2014. Post-stroke cognitive impairment: epidemiology, mechanisms and management. *Ann Transl Med*. 2014;2(8):80.

Tibæk M, Dehlendorff C, Jørgensen HS, Forchhammer HB, Johnsen SP, Kammersgaard LP. 2016. Increasing incidence of hospitalization for sroke and transient ischemic attack in young adults: a registry-based study. J Am Heart Assoc. 2016.

van Dalen JW, Moll van Charante EP, Nederkoorn PJ, van Gool WA, Richard, E 2013. Poststroke apathy. *Stroke. 2013 Mar; 44(3):851-60.*

White GN, Cordato DJ, O'Rourke F, 2012. Validation of the stroke rehabilitation motivation scale: A pilot study. *Asian Journal of Gerontology and Geriatrics.* 7:80-87.

W.H.O. Health Report 2001- Mental health: New understanding, new hope. p40.

Yu HF, Guo NW, Chen HY, Liang CP, 1993. Factors affecting stroke patients' motivation for rehabilitation. Kaohsing Journal of Medical Sciences, 9(5); pp.305-316.

Zielińska, Dorota & Rajtar-Zembaty, Anna & Starowicz-Filip, Anna. 2015. The influence of cognitive, emotional and social factors on motivation for rehabilitation in patients after stroke. Neuropsychiatria i Neuropsychologia. 10. 64-68.

Appendix A

Demographic questionnaire sample with items

- Can you please state your profession?
- How many years have been practising in your profession?
- How many years have been practising in stroke rehabilitation?
- Since qualifying have you done any short courses that relate to the topic of discussion (motivation)? Please specify.
- Have you completed any post graduate studies in your profession? Please elaborate.

Appendix B

Schedule of interview questions

- Please explain what you understand by patient motivation in rehabilitation?
- Do you or your colleagues use the term “motivation” when discussing your patients’ recovery? Please elaborate.
- Would you say the word motivation in rehabilitation setting is used appropriately?
- Do you think patient motivation is an important factor in reaching rehabilitation goals?
- Do you use any standard criterion in your hospital when determining patient motivation?
- The psychologists have advised on the existence of intrinsic and extrinsic factors that influences the patient motivation in rehabilitation. Do you agree with this? (Follow-up: How does a therapist’s behavior impacts the patient motivation?)
- Is there any other information you would like to share on this topic that has not been brought up so far?

Appendix C

Patient information sheet:

Date: ……..

Dear Potential participant

This letter serves to extend an invitation to you to consider participating in my study as part of my Master's degree in the Department of Physiotherapy at the University of Witwatersrand under the supervision of Prof V. Ntsiea. The following is a brief information of what the study is about and what your role will be in the study should you decide to take part:

It is common knowledge amongst rehabilitation therapists that the stroke patients are often categorised as either motivated or unmotivated by rehabilitation therapists. This they often do when discussing the patient progress in rehabilitation. Motivation is a very broad term as it can be driven by intrinsic or extrinsic factors. This study will attempt to establish if there is common understanding amongst the rehabilitation therapists as to what constitutes a motivated and unmotivated patient in the rehabilitation setting in a bid to optimize the rehabilitation outcomes.

As you are an active stroke rehabilitation therapist your input in this discussion will be highly appreciated. A set of questions has been drafted which you will be asked to respond to should you choose to participate in the study. Please note that I undertake to protect your privacy by using a unique number in the place of your name in the research documents. All the information you have provided will be kept confidential in a password protected computer and a locked cabinet at all times. Only the researcher, the assistant and the supervisor will have access to the information. There is a risk of experiencing psychological distress or discomfort during the interview, you are therefore encouraged to communicate this so that you can be provided with the appropriate support. Potential participants will be advised two weeks ahead of time of the interview dates and times via e-mail and sms.

Reminders will be sent five days before the interviews. The interview will be recorded through a voice recorder for accuracy of information. The interviews will take about an hour each.

For any questions regarding this study you can contact me by e-mail at xntsinde@yahoo.com or by telephone at 079 160 266 or my supervisor Prof Veronica Ntsiea at Veronica.Ntsiea@wits.ac.za. If you have any complaints regarding how the researchers conducted themselves or the interview or their treatment towards you may contact the chairperson Prof Clement Perry of the Wits University, Human Research Ethics Committee, established to help protect the rights of research participants, at 011 717 2301.

Appendix D

Attention: Mrs Ida Geldenhuys
Therapy Manager
Riverfield Lodge
c/o Ms. Nina Strydom Senior support specialist
Life Healthcare
Illovo.

Date…….

Re: Letter to seek permission from research site

I am Miss. Xoliswa C. Ntsinde a physiotherapist currently conducting research towards the Master's dissertation under the supervision of Prof V. Ntsiea from the University of Witwatersrand.

The proposed topic of my research is: **Patient motivation in therapy and the impact it has on rehabilitation outcomes post stroke: The rehabilitation therapists' perspective**.

The objectives of the study are:

- To determine stroke rehabilitation therapists understanding of a motivated patient and their knowledge of the various factors that may impact on it
- To establish if as such the term motivated patient is used appropriately by the therapists in stroke rehabilitation
- To explore the stroke rehabilitation therapist's perception of the relationship between patient motivation and rehabilitation outcomes

I am hereby seeking your consent to use your facility to conduct my research.

I have attached a full copy of the research protocol with the interview questions which will be used in the interviews. Please note that the Ethics clearance is still pending.

I am available should you need more clarity or have any queries on this topic. My contact details are as follows: **Mobile:** 079 160 2669, **E-mail:** xntsinde@yahoo.com

Alternatively, you can contact my supervisor: Prof V. Ntsiea:

Email: Veronica.Ntsiea@wits.ac.za

Upon completion of the study, I undertake to provide you with results of the study. Your permission to conduct this study will be highly appreciated.

Yours sincerely,
Ms. Xoliswa C. Ntsinde

The same letter as above was sent to the following hospitals as well:

Attention: Mrs Marethe van Niekerk
Eugene Marais Rehabilitation Hospital
Pretoria

Attention: Mrs Gladys Bogoshi (C.E.O.)
Charlotte Maxeke Academic Hospital
C/o Ms. Tshifhiwa Mukheli H.O.D.(GPHEALTH)
Parktown
Johannesburg

Attention: Mrs I. Geldenhuys
Riverfield Lodge Rehabilitation Hospital
Muldersdrift

Appendix E

Consent form to participate in the study:

The study title: Patient motivation in therapy and the impact it has on rehabilitation outcomes post stroke. The rehabilitation therapist's perspective.

I ..... agree that I have read and understood the information letter about a study being conducted by Xoliswa Ntsinde of the Department of Physiotherapy at the University of Witwatersrand. I understand that my decision to participate is voluntary. I have been given the opportunity to ask questions related to the study and I am satisfied with the answers. I have been advised that my privacy will be assured by using a unique number in the place of my name until the study is completed. The information I give will be kept confidential in a locked cabinet and password protected computer and that only the researcher, research assistant and the Supervisor will have access to the research documents until their destruction after the completion of the study. I have been advised of my right to refuse participation, withdraw my consent at any time during the study and that I don't have to give any reasons for my withdrawal. I have been informed of the possible risk of experiencing psychological distress during the interview, and have been encouraged to communicate should this happen to enable me to receive the appropriate support. I know that I will not be paid for partaking in this research.

I know and understand why this research is done:

I therefore agree to participate in this study of my own free will.

Name of the participant: .....

Signature……Date……

Name of the researcher: …….

Signature: .....Date.....

Appendix F

Consent form to participate in an audio-recorded study:

The study title: Patient motivation in therapy and the impact it has on rehabilitation outcomes post stroke. The rehabilitation therapist's perspective.

I ..... agree that I have read and understood the information letter about a study being conducted by Xoliswa Ntsinde of the Department of Physiotherapy at the University of Witwatersrand. I understand that my decision to participate or refuse to participate in an audio- recorded study is voluntary and I will not face no adverse effects should I refuse to participate. I understand that my real name will not be mentioned in the recording to ensure that I remain anonymous during my participation in the study. I have been informed that the recording will be kept in a locked cabinet with limited access and will be discarded upon completion of the study.

I therefore freely agree to participate in this audio- recorded study.
(Please circle the appropriate answer, either yes or no).

I agree to participate in the study with the understanding that my interview will be voice-recorded. YES / NO

I have been informed that the data will be stored safely until the study is completed, at which point it will be discarded. YES / NO

I have been assured that my confidentiality, rights and dignity will be maintained throughout this process YES / NO

Signature of participant: ..... Date .....
Name of the researcher: …….
Signature: ..... Date.....

Appendix G

Ethics clearance certificate

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

R14/49 Ms XC Ntsinde

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)
CLEARANCE CERTIFICATE NO. M180286

NAME: (Principal Investigator)	Ms XC Ntsinde
DEPARTMENT:	School of Therapeutic Sciences Department of Physiotherapy Medical School University
PROJECT TITLE:	Patient motivation in the therapy and the impact it has on rehabilitation outcomes post stroke: the rehabilitation therapists' perspective
DATE CONSIDERED:	23/02/2018
DECISION:	Approved unconditionally
CONDITIONS:	This clearance is valid for work carried out at Rita Henn & Partners Inc, Life Riverfield Lodge & Eugene Marais Hospital - last two added on 15/08/2018
SUPERVISOR:	Professor V Ntsiea
APPROVED BY:	Professor CB Penny, Chairperson, HREC (Medical)
DATE OF APPROVAL:	13/07/2018

This clearance certificate is valid for 5 years from date of approval. Extension may be applied for.

DECLARATION OF INVESTIGATORS

To be completed in duplicate and **ONE COPY** returned to the Research Office Secretary on 3rd floor, Phillip V Tobias Building, Parktown, University of the Witwatersrand, Johannesburg.
I/We fully understand the conditions under which I am/we are authorised to carry out the above-mentioned research and I/we undertake to ensure compliance with these conditions. Should any departure be contemplated from the research protocol as approved, I/we undertake to resubmit to the Committee. **I agree to submit a yearly progress report**. The date for annual re-certification will be one year after the date of convened meeting where the study was initially reviewed. In this case, the study was initially reviewed in **February** and will therefore be due in the month of **February** each year. Unreported changes to the application may invalidate the clearance given by the HREC (Medical).

Principal Investigator Signature _____ Date _____

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES