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EXPLORING THE PERCEPTIONS AND ASSESSING THE QUALITY OF STROKE CLINICAL PRACTICE GUIDELINES AMONGST ALLIED REHABILITATION PRACTITIONERS BASED IN RURAL PRIMARY CARE HOSPITALS IN THE BUSHBUCKRIDGE LOCAL MUNICIPALITY

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A research report submitted to the School of Public Health, Faculty of Health Sciences, University of the Witwatersrand, in partial fulfilment of the requirement for the Degree of Master of Public Health (Rural Health).

Johannesburg, October 2017

Supervised by:

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Principal supervisor

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Co- supervisor

DECLARATION

I, Kganetso Sekome, declare that this research report is my own unaided work and that assistance obtained has been in the form of professional supervision from Ms Nontsikelelo Mapukata and Dr Motlatso Mlambo. It is being submitted for the Degree of Master of Public Health at the University of the Witwatersrand, Johannesburg. Ethical clearance to conduct the study was obtained from University of the Witwatersrand Human Research Ethics Committee (Medical), approval number: M151180. No part of this dissertation has been submitted before for any degree or examination at any other university.

…… ……

(Signature of candidate) Date

DEDICATION

To my mother,
Experience Bakwaling Sekome,
for the life given to me and for always showing support throughout my studies.

To my aunt,
Glanny Mogakane,
for always encouraging me to invest in my education and to be the best person I can be.

I also dedicate this study to all my close friends who kept me sane and always encouraging me during the course of my studies.

ABSTRACT

Background: Stroke continues to be one of the top leading causes of death worldwide especially in low and middle-income countries. In the absence of a pathological cure for stroke, the most effective management remains rehabilitation. There is insufficient literature to conclude what clinical practitioners' perceptions are regarding clinical practice guidelines (CPGs); and whether the quality of a clinical practice guideline affects its utilisation particularly in rural settings.

Aim: To explore the perceptions and assess the quality of stroke clinical practice guidelines amongst allied rehabilitation practitioners based in rural primary care hospitals in the Bushbuckridge local municipality in Mpumalanga province, South Africa.

Methods: A mixed method design consisting of qualitative and quantitative approach was used. Sixteen rehabilitation practitioners consented to participate in face to face in-depth interviews. They also agreed to assess the quality of the stroke CPGs using a guideline checklist. The study was approved by the Wits human research ethics committee (M151180). Thematic analysis approach was used to analyse data from in-depth interviews whilst checklist results were captured and analysed descriptively using Microsoft Excel, version 2010.

Results: Analysis of the qualitative data revealed seven themes. Whilst participants had poor knowledge about stroke CPGs due to either non-perusal or non-exposure, they maintained positive attitudes regarding guideline utilisation. Barriers affecting utilisation of stroke guidelines included content and contextual factors as most therapists relied on either their university training, clinical skills or peer support for patient care. Strategies for improving the utilisation of stroke CPGs encompassed change in mode of circulation, design change, content addition and ongoing evaluations and staff training. The therapists failed to reach consensus for the majority of questions that form part of the iCAHE checklist. The rating of the quality of the stroke clinical practice guidelines ranged from fair for speech therapists and audiologists (35.71%) to poor for both physiotherapists (20.41%) and occupational therapists (18.57%).

Conclusion: Rehabilitation practitioners in rural Bushbuckridge have poor knowledge about the CPGs for stroke management despite having positive attitude regarding their utilisation. It is possible that contextual factors may have contributed to the poor uptake of the CPGs

and thus, the poor rating. This study suggests rural proofing of CPGs to accommodate the needs of practitioners working in resource limited settings.

Key words: clinical practice guidelines, rural, stroke, perceptions, rehabilitation practitioners

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PRESENTATIONS ARISING FROM THIS STUDY

1. **Sekome K**, Mapukata N, Mlambo M. Rehabilitation practitioners' perceptions of clinical practice guidelines for stroke management when working in rural primary care in South Africa International Society of Physical and Rehabilitation Medicine World Congress. Buenos Aires, Argentina. April 2017. E-poster presentation.

2. **Sekome K**, Mapukata N, Mlambo M. Rehabilitation practitioners' perceptions of clinical practice guidelines for stroke management when working in rural primary care in South Africa. World Confederation for Physical Therapy. Cape Town, South Africa. July 2017. Platform presentation.

3. **Sekome K**, Mapukata N, Mlambo M. Rehabilitation practitioners' perceptions of clinical practice guidelines for stroke management when working in rural primary care in South Africa. School of therapeutic sciences biennial research day. University of the Witwatersrand, Johannesburg, South Africa. September 2017. Oral presentation.

4. **Sekome K**, Mapukata N, Mlambo M. Rehabilitation practitioners' perceptions of clinical practice guidelines for stroke management when working in rural primary care in South Africa. Global evidence summit. Cape Town, South Africa. September 2017. Poster presentation.

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LIST OF ABBREVIATIONS

AGREE	- Appraisal of Guideline Research and Evaluation
AIDS	- Acquired Immunodeficiency Syndrome
CPD	- Continuous Professional Development
CPG	- Clinical Practice Guideline
CVA	- Cerebrovascular accident
DALY	- Disability Adjusted Life Years
DoH	- Department of Health
EBP	- Evidence Based Practice
HIV	- Human Immunodeficiency Virus
HREC	- Human Research Ethics Committee
HPCSA	- Health Professions Council of South Africa
iCAHE	- International Centre for Allied Health Evidence
SAGE	- South African Guidelines Excellence
Stats SA	- Statistics South Africa
WHO	- World Health Organisation

DEFINITION OF TERMS

Clinical Practice Guidelines	:	Systematically developed statements designed to help practitioners and patients to make decisions about appropriate health care.
Clinical Protocol	:	The detailed outline of the steps to be followed in the treatment of a patient.
Evidence Based Practice	:	The integration of clinical expertise, patient values, and the best research evidence to provide high-quality services reflecting the interests, values, needs, and choices of the individuals we serve.
Practitioner	:	Someone practicing a skilled profession for which special education or licensing is required.
Professional	:	A person formally certified by a professional body of belonging to a specific profession by virtue of having completed a required course of studies and/or practice. And whose competence can usually be measured against an established set of standards.
Rehabilitation	:	The health strategy that aims to enable people with health conditions experiencing or likely to experience disability to achieve and maintain optimal functioning in interaction with the environment.
Stroke	:	Rapidly developing signs of focal or global disturbances in cerebral function, with no apparent cause other than vascular origin, with symptoms lasting for 24 hours or more.
Therapist	:	A person trained in methods of treatment and rehabilitation other than the use of drugs or surgery.

CHAPTER ONE

1. INTRODUCTION

1.1 INTRODUCTION

This chapter provides a detailed background about the study. It provides an overview of literature related to the prevalence of stroke globally and continentally. It outlines the problem statement that guides this study as well as the justification for undertaking this research. The chapter also outlines the research question, aim and objectives of this study.

1.2 BACKGROUND

The World Health Organization recommends a definition for stroke, also known as Cerebrovascular accident (CVA), as "rapidly developing clinical signs of focal or global disturbances in cerebral function, with no apparent cause other than vascular origin, with symptoms lasting for 24 hours or more" (WHO, 1988, p.41). A more recent definition of stroke for the 21st century is provided by Sacco et al. (2013, p.2067). It states that stroke is "brain, spinal cord, or retinal cell death attributable to ischaemia, based on neuropathological, neuroimaging, and/or clinical evidence of permanent injury." Stroke is reported to be the 4th major cause of disease burden and disability worldwide following heart disease, HIV/AIDS and unipolar depression (Joubert et al., 2008; Boger et al., 2013). Stroke is also one of the top five leading causes of disability and death worldwide (Conner & Bryer, 2005; Joubert et al., 2008; Maredza et al., 2015). In 2013, stroke was found to account for 82.4% of all deaths from cerebrovascular diseases in South Africa (Statistics South Africa, 2014).

Studies show that people living in rural settlements are more vulnerable to developing stroke than those in urban settlements (Joubert et al., 2008; Leira et al., 2008). This is due to disparities in health interventions between rural and urban dwellers. Approaches to the management of acute stroke in the rural areas are considered sub-optimal, thus creating a health inequity between patients in urban settings and their rural counterparts (Joubert et al., 2008; Leira et al., 2008).

Because of dominant symptoms of stroke which include slurred speech, numbness, blurred vision, weakness or paralysis, severe headache and confusion, stroke necessitates a need for a combined multi-disciplinary team approach. In that regard,

the efforts of allied rehabilitation practitioners guided by clinical practice guidelines are critical in assisting the stroke survivor to achieve or maintain optimum physical function (Abdul Aziz et al., 2014). For this study, allied rehabilitation practitioners included physiotherapists, occupational therapists, speech therapists and audiologists. In South Africa, these rehabilitation practitioners undergo four years of undergraduate university training which prepares them to manage stroke patients amongst other conditions (HPCSA, 2012). Rehabilitation is an integral part of recovering function in patients who have suffered a chronic condition such as stroke. It provides the patient with functional independence so that the patient is well integrated in activities of daily life (Peppen, 2008). It has however been reported that therapists working in rural areas often lack access to continuous professional development (CPD) activities that assist in keeping up to date with new knowledge on specific topics including stroke (Sein & Tumbo 2012). To fill the gap in the lack of CPD activities in rural areas, clinical practice guidelines that are contextualised for rural therapists are required so that therapists are always providing the best up-to-date clinical interventions for stroke patients.

Clinical practice guidelines (CPGs) are defined as "systematically developed statements designed to help practitioners and patients to make decisions about appropriate health care" (Field & Lohr, 1992, p.2). CPGs are a form of scientifically developed statements aimed at reducing disparities in patient care by assisting practitioners with clinical decision making (Thomas et al., 2000; Francke et al., 2008). Clinical practice guidelines are issued to assist with evidence based information for the management of specific medical conditions, including stroke. Patients seek health care that is guided by evidence. CPGs are a common aspect of health care that strongly encourage the use of evidence based practice (EBP) (Bekkering et al., 2005; Van der Wees et al., 2008). The recommendations made on a CPG are underpinned by evidence.

International research has reported on many issues pertaining to guidelines utilization by health care practitioners (Francke et al., 2008). As shown on systematic reviews, the mode of information transfer is essential in implementation of CPGs (Bouter et al., 2005). For instance, a guideline that is too long and time consuming is less likely to be read, therefore it is never used. It can be said that in the rural areas, the prevalence of ill-health is high thus putting an extra demand on rural therapists to attend to such patients, leaving little to no time for reading long documents (Joubert

et al., 2008; Leira et al., 2008). Another issue that adds to the extra demand on these therapists is the understaffing in rural public health facilities.

Furthermore, the mode of CPG dissemination varies from country to country, the majority being by mail (Bekkering et al., 2005; Bouter et al., 2005). The way practitioners receive CPGs impacts on the level of implementation and use as some practitioners have reported that they are unaware that CPGs exist (Agrawal et al., 2008). This shows that merely disseminating CPGs will not result in optimal uptake. Other factors that have been reported to impact on the uptake of clinical guidelines include lack of time to read the guidelines, characteristics of the patient such as the presence of co-morbidities, being supported by peers or colleagues, and preference to use own clinical experience (Bennett et al., 2003; Francke et al., 2008).

Other studies also indicate that health care practitioners reported that if the guidelines were easy to understand and piloted before implementing them, their use could improve (O'Donnell, 2003; Qaseem et al., 2012). Guidelines that are therefore intended for multidisciplinary practitioners need to ensure that they take this into account. Piloting a clinical practice guideline before implementing it would ensure that the necessary changes are made before the guideline gets published, especially changes that speaks to the context of the target population. According to Bekkering et al. (2005), making guidelines available to clinical practitioners without explaining their purpose and implementation strategy leads to a very low chance of utilisation.

The publication and implementation of CPGs does not necessarily mean that their quality is good. Therapists that perceive clinical guidelines as being of poor quality will have negative attitudes about them and this results in the guidelines not being used (Wiseman et al., 2013; Louw, 2016). Grimmer-Somers et al. (2014) reported that rating the quality of a clinical guideline helps in identifying the gaps that needs to be filled before a guideline can be accepted for use.

Some of the contributing factors regarding the low uptake of CPGs among therapists in rehabilitation besides the lack of time include, lack of skills in understanding what is presented on the guidelines, shortage of staff, and therapy preference which is not always consistent with CPGs (Bennett et al., 2003; Louw, 2016). In a study conducted by Bennett et al. (2003), physiotherapists preferred using their clinical experience and experience of colleagues than using clinical evidence-based guidelines. On the other hand, Bekkering et al. (2005) reported that physiotherapists

treating patients with low back pain did not always adhere to clinical guidelines as they often had limited treatment sessions with their patients. Other surveys also reported similar findings for nurses in Ireland (Parahoo, 2000); for occupational therapists (O'Donnell, 2003) and primary healthcare professional nurses in the United Kingdom (Palfreyman et al., 2003).

Many assumptions have been made that evidence-based clinical intervention that is guided by clinical practice guidelines is optimal (Muckart, 2013). Yet, when translated into clinical practices there are notable gaps (Walshe & Rundall, 2001). The gap between research and clinical practice is in part due to research bias, research sponsorship, and mathematical probability which in clinical practice may not be relevant (Muckart, 2013). Research tailored to clinical use needs to provide a good summary that is of high quality, not merely giving out quick handouts to practitioners as they do not have interest in them. The practitioners reject these handouts as they do not state how they came to their recommendations. Francke et al. (2008) are of the view that if every practitioner adhered to CPGs, improvements in health outcomes would be inevitable. The aim of this study is to explore the perceptions and assess the quality of stroke CPGs amongst allied rehabilitation practitioners based in rural primary care hospitals.

1.3 STATEMENT OF THE PROBLEM

Previous and recent literature shows that practitioners' perceptions regarding the quality of CPGs affect its utilization (Cabanna et al., 1999; Grimmer-Somers et al., 2007). Studies have also shown that practitioners tend to avoid appraising the quality of CPGs because guideline appraisal is time consuming (Grimmer-Somers et al., 2014). However, literature on South African rehabilitation practitioners' perceptions regarding quality of stroke guidelines is lacking, particularly in rural settings. There is insufficient evidence to conclude what clinical practitioners' perceptions are regarding CPGs and whether the quality of a CPG affects its utilization or not.

1.4 JUSTIFICATION OF THE STUDY

Clinical practice guidelines are a common aspect of health care that strongly encourages the use of evidence based practice. They are not only essential in improving the quality of patient care; they are also helpful in avoiding disparities in the treatment and care provided to patients (Thomas et al., 2000). Additionally, EBP is important for curriculum developers and policy makers when developing clinical policies and translating them into practice. The development of CPGs does not

always mean that practitioners will use them in clinical practice. There is a paucity of literature exploring allied rehabilitation practitioners' perceptions about stroke CPGs and whether these practitioners in the South African context are implementing CPGs as provided by the provincial departments. It is important to understand practitioners' attitudes and perceptions regarding CPGs in order to improve their utilization.

1.5 RESEARCH QUESTION

How do allied rehabilitation practitioners based in rural primary care hospitals in the Bushbuckridge local municipality perceive and assess the quality of stroke clinical practice guidelines?

1.6 OVERALL AIM

To explore the perceptions and assess the quality of stroke clinical practice guidelines amongst allied rehabilitation practitioners based in rural primary care hospitals in the Bushbuckridge local municipality and, evaluate if there is a gap between policy and practice.

1.6.1 Specific Objectives

- To explore the knowledge and attitudes related to stroke clinical practice guidelines among allied rehabilitation practitioners based in rural primary care hospitals in the Bushbuckridge local municipality.
- To explore the practices related to the use of stroke clinical practice guidelines among allied rehabilitation practitioners based in rural primary care hospitals in the Bushbuckridge local municipality.
- To assess the quality of stroke clinical practice guidelines used by allied rehabilitation practitioners based in rural primary care hospitals in the Bushbuckridge local municipality.

1.7 LITERATURE REVIEW

1.7.1 Utilization of clinical evidence

There is much value in making clinical decisions for patient care based on clinical evidence, a phenomenon commonly known as evidence based practice (EBP). According to Ross and Davidson (2006), employing EBP strategies are beneficial in making the most effective decisions about patient care. Making appropriate use of best evidence for patient care means that the clinician is selecting proven approaches and techniques that will significantly result in improved patient outcomes (Muckart, 2013). Although EBP has been shown to improve patient outcomes when used appropriately, there is still a notable gap between policy and clinical practice. Physiotherapists reported that lack of education about EBP, negative perceptions about research and their role in EBP were the main barriers to implementing EBP for people living with stroke (Salbach et al., 2007). In their survey, Ross and Davidson (2006) found that although physiotherapists had a positive attitude towards EBP the uptake was still very low. The main barriers were identified as lack of time to update their knowledge, lack of access to evidence, and lack of personal skills to search for and evaluate evidence.

A most common form of evidence based practice in clinical setting is a clinical practice guideline (CPG). This is a systematically developed document that locates, evaluates, and provides recommendations on summaries of the best available evidence on specific topics. It aims to improve effectiveness and reduce disparities in patient care (Dagenais et al., 2010). The development of CPGs was motivated by research reporting on the wide variations and high level of inappropriate patient care for common health conditions (Fritz et al., 2007). As with evidence based research practice, CPGs have been reported to have a low adherence by clinicians. One of the widely reported reasons for the low uptake is clinicians' understanding of how the guideline developers arrive at their recommendations (Dagenias et al., 2010).

1.7.2 Global and Local Overview of Stroke

Stroke is a known global public health concern and is reported to be the leading cause of death and disability worldwide (Joubert et al., 2008; Maredza et al., 2015). In 2008, stroke was responsible for 95 000 years lived with disability (Lancet, 2009) whilst in 2013, stroke accounted for 82.4% of all cerebrovascular disease related deaths in South Africa suggesting a growing problem. Globally, by 2020 Boger et al. (2013) predicts that stroke and coronary-artery disease will be the leading cause of global lost healthy life-years.

Historically, in rural South Africa the major disease burden was infectious diseases but this has been taken over by non-communicable diseases (Connor, 2004). A transition has been observed where stroke is no longer a “Western” disease but is affecting populations in low and middle-income countries as well. A systematic review by Feigin et al. (2009) reported that the proportion of haemorrhagic stroke is greater in low-income and middle-income countries than high-income countries and that there have not been any major changes in the proportion of stroke in the past three decades. However, Krishnamurthi et al. (2013) noticed a trend that showed an increasing incidence of ischaemic stroke and a decrease in mortality rates for ischaemic and haemorrhagic stroke, disability adjusted life years (DALYs), and mortality-to-incidence ratios in low-income and middle-income countries.

A hospital-based study in South Africa found that over 70% of all stroke patients admitted in an academic hospital in Johannesburg were black and only less than 20% were white patients (Connor, 2009). Although there is insufficient conclusive data, the racial difference in this study gives an indication of the prevalence and risk factors of stroke in a South African population. When investigating the prevalence of stroke survivors in rural South Africa, Connor (2004) found a crude prevalence of 243/100 000 aged ≥15 years. Similar results reported in a study by Maredza et al. (2015) in the same population established that 1,070 DALYs are lost yearly due to stroke. Maredza et al. (2015) concluded that overall in the rural areas of South Africa, the burden of stroke is high. One of the contributing factors to the increased burden of stroke in rural areas is the lack of health promotion programmes that are aimed at promoting healthy lifestyles and targeting the prevention of the disease (Connor, 2004). Although stroke is highly preventable (Joubert et al., 2008), there is still a need to provide care and rehabilitation to those who have survived a stroke incident. This care and rehabilitation is strengthened using evidence based recommendations and CPGs that are well developed provide the best recommendations. The need to provide this care is greater in rural and underprivileged communities due to the high burden of stroke and the lack of human resources to provide such care.

1.7.3 **Delivery of Stroke Care in Underprivileged Communities**

Many factors were found to contribute to poor delivery of stroke care in underprivileged communities. These include the lack of specialized stroke units, differences in the health delivery systems, problems of access to health services, and

the lack of guidelines on stroke care especially contextualized guidelines (Salbach et al., 2007). Stroke survivors living in a rural community in South Africa reported that living with stroke is a big threat to their livelihood and they felt like they were a heavy burden to their caregivers as they could no longer participate in income generation (Maleka et al., 2012). South Africa is not the only country that experiences poor delivery of stroke care in rural areas. Rural and remote areas in the United States also experience similar challenges. They attribute their challenges to an aging population, higher prevalence of diabetes mellitus and cardiovascular diseases (Leira et al., 2008). Other challenges that are also observed in South Africa that were reported by Leira and colleagues include a shortage in health care professionals and a lack of specialists such as neurologists. Rehabilitation practitioners and CPGs are amongst the key building blocks of a health care system. They serve important roles in providing the health workforce and health information for the system respectively. This is particularly important since there is no known pathological cure for stroke (Connor & Bryer, 2005).

1.7.3 Rehabilitation of Stroke Survivors as a Multidisciplinary Process

Rehabilitation is described by Stucki et al. (2007, p.279) as "the health strategy that aims to enable people with health conditions experiencing or likely to experience disability to achieve and maintain optimal functioning in interaction with the environment". Rehabilitation is effective in improving the patient's quality of life. The aim of rehabilitation is to provide the patient with functional independence that will enable integration in their daily life (Peppen, 2008). The main disciplines involved in stroke care are physiotherapists, occupational therapists, speech and language therapists, nurses, psychologists, and doctors (Monaghan et al., 2005). Of these, there are three key allied rehabilitation professionals that play a central role in the rehabilitation of stroke survivors. These are physiotherapists, occupational therapists, speech therapists and audiologist.

The multidisciplinary team work of rehabilitation practitioners is important in improving patient's recovery following stroke. As a category of allied rehabilitation practitioners, occupational therapists are largely involved in enabling people to achieve health, life satisfaction, and well-being through maximizing patients' participation in a range of occupations. According to Steultjens et al. (2003) and Drummond et al. (2006), the treatment approach of an occupational therapist is aimed at maximizing the daily activities of living for the affected. Physiotherapists, as the only allied health practitioners in South Africa to be recognised as first line

practitioners by HPCSA since 1985, play a significant role in the management of patients following stroke. Their role includes establishing a functional diagnosis and determining factors that predict functional outcome, and restoration of motor control in gait through remedial interventions (Peppen, 2008). Speech therapists and audiologists play a very active role in the management and rehabilitation of language and speech deficits resulting from a stroke, with aphasia reported as the most common form of speech deficit (Pederson et al., 2004; HPCSA, 2012). The management of stroke patients is thus a combination therapy from rehabilitation practitioners and the provision of EBP plays a significant role in achieving better outcomes for the patient.

1.7.5 **Impact of Clinical Practice Guideline**

Practitioners, especially in the public sector found that although adoption of CPGs improved the quality of care provided to patients, it was time consuming (Francke et al., 2008). In the Netherlands, where the clinical guidelines for physiotherapists were disseminated by mail, the uptake was rather poor (Bekkering et al., 2005). In rural North South Wales, all the rural referral hospitals reported that they are aware of CPGs for acute stroke management. However, less than half of these rural referral hospitals have utilized these guidelines in practice (Gill et al., 2007).

As an aspect of clinical practice guidelines**,** evidence based practice is essential in the day to day care of patients in this field. This was reported in a survey conducted with Australian occupational therapists. Even though these occupational therapists agreed that EBP improves patient care, less than 50% reported applying practice research-based approach to their clinical work (Bennett et al., 2003).

In a study conducted with health professionals to review the provision of post stroke care, Abdul Aziz et al. (2014) found that 70% of the health professionals did not have a standardized care plan at their clinic. However, 96% of the surveyed health professionals agreed that having a standardized care plan would better the quality of their patient care and that standardized care plan was necessary.

1.7.6 **Clinical Practice Guidelines vs Clinical Protocols**

While CPGs are often clearly defined and understood, clinical protocols lack in this regard as the two are often used interchangeably. Suarez (2017) is of the view that there is a clear distinction between the two terms and cautions against substituting the one for the other. She states that clinical protocols provide the clinician with rigid

steps to follow in the management of a specific health condition. Thompson (2017), on the other hand reported on similarities between clinical protocols and clinical practice guidelines as both have the potential to enhance clinical patient outcome when used appropriately and if based on the best current evidence. Thomson is of the view that the steps provided in both protocols and guidelines should be comprehensive and also based on scientific clinical research.

1.7.7 Rating the Quality of a Clinical Practice Guideline

Clinical practice guidelines may appear convincing if the focus is on guideline quality as it is the quality that ensures that they provide the best recommendations (Wiseman et al., 2013). It is important for any clinical practice guideline to go through a process of being rated for its quality. Some of the reasons for low uptake of CPGs have been linked to the quality of the CPG. Stroke clinical practice guidelines that are of poor quality are generally not used by health practitioners (Wiseman et al., 2013; Grimmer et al., 2014). This indicates the importance of rating the quality of a guideline. A guideline that has not followed the correct procedures to ensure good quality of recommendations may have severe consequences. For example, the poor quality of a guideline that was published by The European Society of Cardiology on perioperative beta-blockade lead to the chairperson being subject of investigation for scientific misconduct (Hawkes, 2013). An estimate of 10 000 iatrogenic deaths could have been prevented if this guideline was screened for its quality. It is clear therefore that the quality of a guideline needs to be rated before a guideline can be implemented.

As end-users, it is imperative that clinicians familiarize themselves with the process of rating the quality of a CPG (Wiseman et al., 2013). Several tools exist for guideline quality rating. The AGREE II (Appraisal of Guideline Research and Evaluation) instrument was developed internationally in 2010 by Brouwers and colleagues. Their instrument, which requires more than one scorer, consists of six domains and a total number of 23 items; each item scoring 1-7 (strongly disagree to strongly agree). To ensure a valid score, the total scores from the scorers are combined and a rubric is used to determine the final score.

A more recent simplified tool, the international Centre for Allied Health Evidence (iCAHE) CPG quality checklist was developed by Grimmer et al. (2014) as an alternative to the AGREE II. The iCAHE tool was developed as a response to busy guideline end-users who did not have the time and human resources to use the

AGREE II instrument. The iCAHE has similar domains to the AGREE II but with only 14 questions requiring a yes/no response and it require a single scorer. The checklist takes approximately 5 minutes to complete. The total score is the sum of the 'yes' responses. Both instruments showed moderate to strong correlation in pilot testing (r= 0.89) undertaken by Kredo et al. (2016).

1.8 CONCLUSION

This chapter revealed that there is a paucity of literature around the issue of clinical practice guidelines, especially in a context such as South Africa. The perceptions of rehabilitation practitioners working in rural primary care areas about the use of clinical practice guidelines are not clear. The objectives stated in this chapter are appropriate to address the stated research question and the research problem statement. The steps undertaken to conduct this research are explained in the next chapter.

CHAPTER TWO

2. METHODOLOGY

2.1 INTRODUCTION

This chapter presents the method used to conduct the study in terms of the study design, study setting, study population, sampling method, data collection and analysis. In addition, data management and pilot study procedures are also discussed. A description of ethical issues considered in this study is also provided.

2.2 STUDY DESIGN

A mixed method study design consisting of both qualitative and quantitative research approaches was used to conduct the study. The first and second objectives were answered qualitatively while the third objective was answered quantitatively. Qualitative approach afforded the researcher an opportunity to gain in-depth understanding on the attitudes, knowledge, and practices related to the quality of stroke CPGs among the study participants (Joubert & Ehrlich, 2007). Using a quantitative approach to answer the third objective allowed the researcher to obtain a rating score of the quality of stroke CPGs. Both approaches were suited to answer the stated research question (Joubert & Ehrlich, 2007).

2.3 STUDY SETTING

The study was conducted in the Bushbuckridge local municipality at the three hospitals namely: Tintswalo, Mapulaneng and Matikwana. The 2006 National Human Resources Plan classifies these three hospitals as rural district hospitals (Department of Health, 2006). Both Tintswalo and Mapulaneng hospital are large district hospitals with approximately 420 and 250 beds respectively; whilst Matikwana is a medium sized district hospital with approximately 178 beds.

Bushbuckridge local municipality, where the three hospitals are based, is constituted under the Mpumalanga province, and its services fall under the management of Ehlanzeni district municipality (Figure 2.1). According to the 2011 Census statistics, Bushbuckridge local Municipality consisted of a total population size of 541, 248 persons. This accounts for 34% of the total population of the Ehlanzeni district municipality and about 14% of Mpumalanga Provincial population (Statistics South Africa, 2011). When compared with the other four local municipalities in Ehlanzeni

district municipality, Bushbuckridge local municipality covers the most (thirty-four) primary health care clinics which are served by the three primary care hospitals (Table 2.1). Most of the primary care hospitals in this local municipality are classified as rural hospitals. Therefore, this makes the Bushbuckridge local municipality the most rural municipality of the five, hence the choice of the study site.

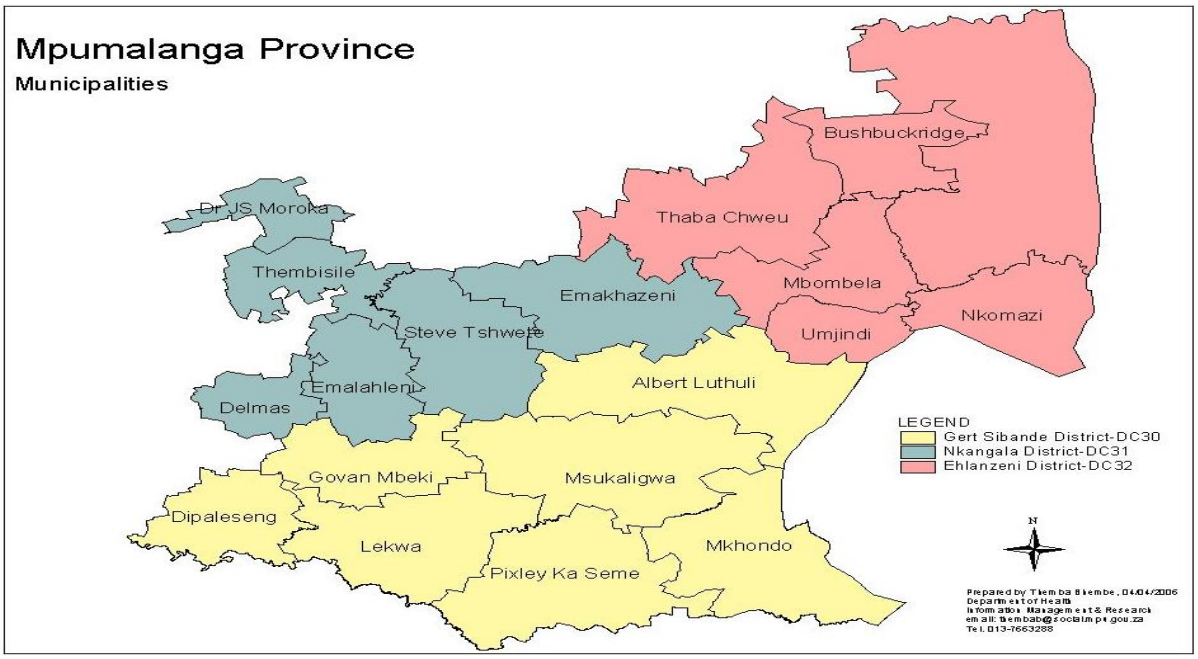


Figure 2.1: Local Municipalities in Mpumalanga Province (www.mapsofworld.com)

Table 2.1: Local Municipalities in Ehlanzeni District Municipality and the Distribution of Health Care Facilities

Local Municipality name	No. of Public Hospitals	No. of Community Health Centres	No. of Primary Health Care Clinics
Thaba Chweu	3	0	10
Mbombela	2	6	10
Nkomazi	2	4	27
Umjindi	1	1	10
Bushbuckridge	3	4	34
Total	11	15	91

2.4 STUDY POPULATION

There were 28 allied rehabilitation practitioners employed at the three identified study sites (Tintswalo, Mapulaneng and Matikwana hospitals) at the time of data collection.

Inclusion Criteria

All allied rehabilitation practitioners (28 in total) employed at the study sites were recruited to participate in the study to ensure maximum variation. Practitioners had to be involved in the management of stroke patients at their institutions. Practitioners of all ages, genders, and job/post level were considered to participate in this study.

Exclusion Criteria

Therapy assistants and therapy technicians were excluded from the study as they only work under supervision of a qualified rehabilitation practitioner. They are not qualified to manage patients independently (HPCSA, 2012).

2.5 STUDY SAMPLE

A purposive sampling approach was used to select study participants. This type of sampling allowed the researcher to choose the people who were most relevant to provide appropriate data (Joubert & Ehrlich, 2007).

In total, 16 participants were interviewed and they also completed the iCAHE guideline checklist. Twelve participants were excluded from the study because they were either not involved in the management of patients who suffered a stroke (n = 4), not interested in participating in the study (n=4), or were not available during the time of data collection (n=4) due to employee leave (maternity, vacation etc.). A flow diagram describing the study participants is provided below (Figure 2.2).

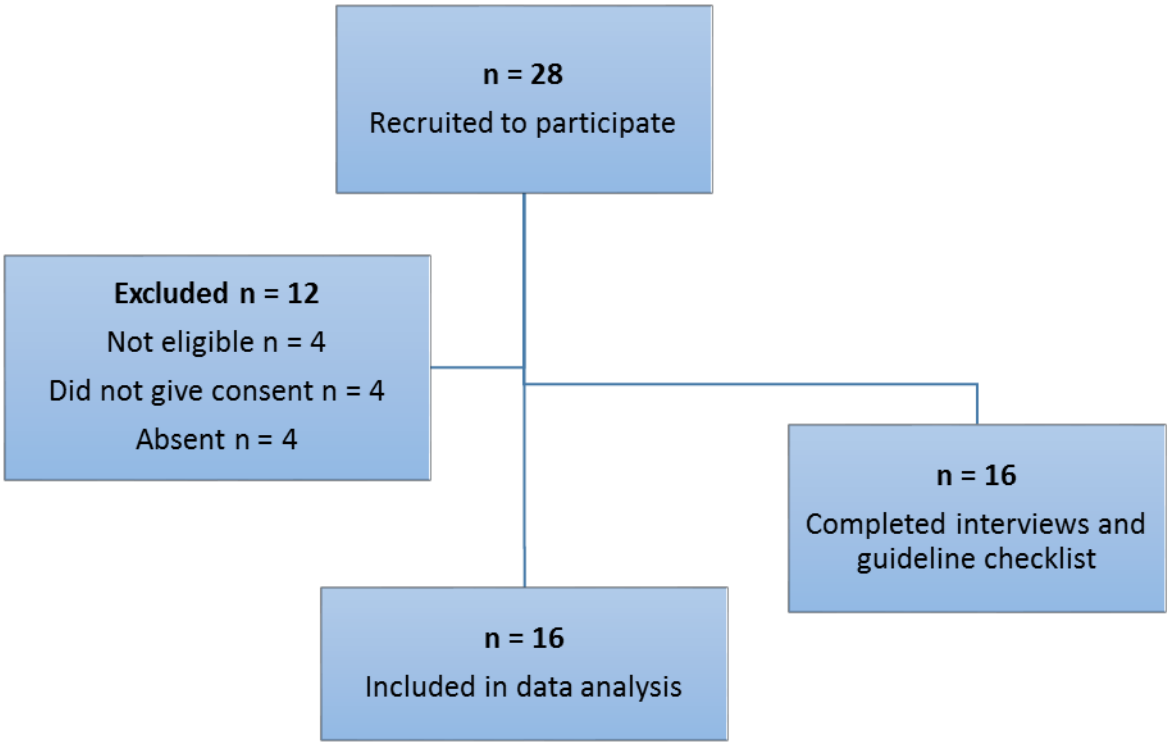


Figure 2.2: Flowchart Depicting Study Participants from Recruitment to Data Analysis

2.6 DATA COLLECTION TOOLS AND RESEARCH PROCEDURE

For the first and second objectives, the researcher used an in-depth interview guide (Annexure 1) to collect data. The interview guide was developed by the researcher based on the study objectives, guided by literature and what this study sought to explore. The researcher acknowledged that not all questions would be applicable to all study participants for various reasons such as some therapists not knowing about guidelines. To simplify the interview process, the researcher used different random colours to highlight questions relating to each profession. The colour coding method made it easier to navigate through the interview guide during the interview process. This colour coding method was used to identify which questions were relevant to which study participant. All the interviews were conducted in English. Interviews lasted between 20 – 40 minutes.

For the third objective the researcher administered the iCAHE guideline quality checklist (Annexure 2) developed by Grimmer et al. (2014). The iCAHE tool was developed for busy guideline end-users who did not have the time and human resources to use other guideline quality rating tools that require more resources such as the AGREE II instrument. The iCAHE contains 14 questions requiring a yes/no

response and it requires a single scorer. The checklist takes approximately 5 minutes to complete. The total score is the sum of the 'yes' responses. The iCAHE tool showed moderate to strong correlation in pilot testing (r= 0.89) undertaken by Kredo et al. (2016).

The checklist was a printed copy and each participant completed the checklist by ticking either 'Yes' or 'No'. These professional guidelines (Annexure 7, 8, and 9) are sent to the provincial rehabilitation coordinator in the Mpumalanga province by the Mpumalanga department of health. The provincial coordinator then makes them available to heads of therapy department of each hospital during provincial rehabilitation forums. The head of departments then takes it upon themselves to make these guidelines available to the therapists at his/her district hospital without any follow-up on the mode of dissemination. The timeframe for sending/receiving these guidelines is not defined so some therapists who may be newly employed at these hospitals may not be aware of their existence. The checklist was used to assess the quality of the guidelines which were already available at the study sites. The researcher verified the availability of the guidelines from the head of departments at each study site prior to data collection. Those therapists who have never seen these guidelines were given time to peruse them during the interview process before rating their quality.

Data was collected between the period of February 2016 and March 2016. The interviews were conducted at one of the rehabilitation department office at each hospital. The room was chosen for its potential to afford privacy and also allow for the recording of the interviews with no disruptions (Gubrium, & Holstein, 2001).

2.7 PILOT STUDY

A pilot study was conducted to assess the feasibility of the study which involved checking if the questions asked were easy to understand, acceptable, and if questions elicit the required responses to answer the research questions (Joubert & Ehrlich, 2007). The pilot study was conducted with three peers who are rehabilitation practitioners in practice and are currently registered for the masters in public health in the same year of study as the researcher. The researcher used the outcome of the pilot study to make changes to the structure of research questions and duration of interviews in the final interview guide. An example of a question that was unclear during the pilot study was "How do you decide what to use to manage your stroke

patients?" which was then changed to "What is your approach to the management of stroke patients? (What guides your decision making)".

2.8 DATA ANALYSIS

Qualitative data analysis

For the first and second objectives (qualitative data), the researcher prepared data for analysis by downloading the audio recorded data and saving it in a Windows Media Player 2010 file on a computer. A research assistant who was briefed about the aim and objectives of the study transcribed verbatim the audio-recorded data. The research assistant was chosen based on his prior transcription experience and his fluency in English. To ensure quality transcription, the researcher transcribed the first audio recorded interview and provided the research assistant with basic transcription skills.

Following the transcription process, the researcher conducted data cleaning which involved checking for spelling and grammatical errors. Transcribed data was analysed using thematic analysis approach, a rigorous process that involves data familiarisation, data coding, and theme development (Creswell, 2011). As part of thematic analysis approach, the researcher familiarized himself with the data by reading it a number of times and comparing all the transcriptions. To ensure consistency during data analysis, the researcher created a codebook consisting of deductive codes based on literature and study objectives (Annexure 6). In vivo coding was also performed to ensure inclusion of participant's exact use of words during the interview. Similar codes were then grouped to form themes and sub-themes.

2.8.1 Trustworthiness

Trustworthiness in qualitative research is a means of ensuring the validity of qualitative research data (Trochim, 2006). There are several threats to trustworthiness of data in qualitative inquiry. To manage these threats, Creswell (2011) describes strategies that researchers can engage in order to ensure trustworthiness of data. These include credibility, dependability, transferability and conformability.

2.8.1.1 **Credibility**

Credibility in qualitative research refers to the extent to which the results of the research are believable (Trochim, 2006). The researcher ensured credibility by establishing a clear interview guide based on the study objectives before the interviews, taking notes during each interview and ensuring clear recordings and verbatim transcription of each interview. An inter-coder agreement approach was also used to ensure credibility. This involved engaging with peers to assess credibility of the codes. The peers checked the codes and themes and provided feedback to the researcher through debriefing sessions.

To ensure credibility of data, the researcher also employed a triangulation process which is a technique of data validation through the use of two or more sources (Creswell, 2011). This was achieved by interviewing three categories of key informants (physiotherapists, occupational therapists, speech therapists and audiologists) who are involved in the rehabilitation of stroke patients. This provided a rich data on the knowledge, attitudes, and perceptions of rehabilitation professionals. The study also applied two ways of data collection, that is, through face-to-face interviews and through a checklist questionnaire.

2.8.1.2 **Dependability**

Dependability generally refers to the consistency in the way the researcher conducted the study over time (Trochim, 2006). The researcher ensured dependability by sticking to the interview guide during data collection. All data was collected in a therapy office at the rehabilitation department of each study site. The researcher also ensured that the processes followed when conducting this study are explained in clear detail to allow future researchers to replicate.

2.8.1.3 **Transferability**

Transferability refers to the generalization of study findings to another context. Generalization in qualitative research is limited (Trochim, 2006). The researcher achieved transferability by purposive sampling. Through purposive sampling, the researcher was able to choose key participants who were able to provide specific information relating to the research question that the researcher could maximize in relation to the environment where the study occurred. The researcher also gave a thick description of the study participants, the study context, and the procedure followed when conducting this study.

2.8.1.4 **Conformability**

Confirmability in qualitative research refers to the degree to which the results can be corroborated by others; it also refers to the objectivity or neutrality of the data (Trochim, 2006). To minimise bias, the researcher used participants' direct quotations when analysing the data. The researcher employed an external transcriber and also obtained input from supervisors to minimise bias during data analysis.

2.8.1.5 **Reflexivity**

The researcher was once employed at one of the study sites as a physiotherapist and could identify with few of the study participants. The researcher maintained a clear focus and kept to the interview guide in order to avoid personal bias during data collection.

Quantitative data analysis

For the third objective, data was captured and analysed by using Microsoft Excel, version 2010. The iCAHE guideline quality checklist is made up of 14 questions with a 'yes' or 'no' response. Data was captured categorically in numeric form: a 'no' response = '0', a 'yes' response = '1'. An average score was obtained from each participant in the form of a percentage; the scores were compared across the three professions:

$$\text{Formula: } \frac{\text{Participant score}}{\text{Total possible score}} \times 100$$

The iCAHE guideline quality rating does not give a description of the level of quality of a guideline after obtaining a total score (Grimmer et al., 2014). After obtaining an average percentage from each of the profession, the researcher categorized the guideline quality rating as follows based on related research (Wiseman et al., 2013):

0 – 24% : Poor quality
25 – 49% : Fair quality
50 – 74% : Good quality
75 – 100% : Excellent quality

2.9 ETHICAL CONSIDERATIONS

Joubert and Ehrlich (2007) reiterate the importance of conducting research under the proper ethical code. The researcher obtained ethical approval to conduct this study from the Human Research Ethics Committee (HREC) (medical) of the University of the Witwatersrand (approval number: M151180) (Annexure 10). Additional ethical approval was obtained from the Mpumalanga province Department of Health to conduct the study at their public health care facilities (Annexure 11). A letter of permission was sent to the hospital manager at each of the three study sites and permission was granted (Annexure 12). In this study, the following ethical requirements were taken into consideration.

2.9.1 Voluntary Participation

All participants were provided with an information sheet (Annexure 3) and they decided whether or not they wished to participate in the study. Participants who agreed to participate in the study were asked to sign the written informed consent forms (Annexure 4 and 5) and the researcher collected them on the day of data collection. The purpose of informed consent was to ensure that participants understood the research procedure including risks and benefits of their participation (Joubert & Ehrlich., 2007). The participants were also informed that they could withdraw from the study at any time. All signed consent forms are kept in a locked drawer where only the researcher can access them. The audio recordings are saved in the researcher's laptop with a password protected file. These will be destroyed after five years of the study publication.

2.9.2 Confidentiality

All study participants were assured of confidentiality. An audio recorder was used to collect data for the first and second objective. The study participants were de-identified during interviews by allocating each occupation a number (1, 2 and 3); each participant was identified by a letter (a, b, c, etc.).

2.10 CONCLUSION

This chapter presented the design and methodology used to conduct this study. The discussion included ethical issues that were considered when conducting this study as well as the data analysis process that was followed. In the next chapter, the results of the study are presented based on the study objectives.

CHAPTER THREE

3. RESULTS

3.1 INTRODUCTION

This chapter presents both qualitative and quantitative results of the study. The results are presented in terms of participants' demographics, major thematic findings for the first two objectives as well as rating of the iCAHE guideline as an outcome for the third objective.

3.2 PARTICIPANTS' DEMOGRAPHICS

The demographic profile of the participants in this study is provided in Table 3.1. All study participants were employed full-time at either one of the study sites occupying the position of physiotherapist (n=7), occupational therapist (n=5), or speech therapist & audiologist (n=4). Six participants indicated their source of guideline information as either from a colleague/ immediate co-worker influence, adopted from other provinces, provincial physiotherapy forum, university training influence, supervisor influence, provincial coordinator facilitation. Ten participants had not been exposed to stroke guidelines. The employment duration of the participants was grouped into three categories to ensure anonymity of study participants.

Table 2.1: Participant's Demographics

Participant No	Employment Duration	Profession	Source of Guideline Information
1	1 – 2 years	Occupational therapist	Never exposed
2	0 – 1 year	Physiotherapist	Never exposed
3	0 – 1 year	Physiotherapist	Colleague/ immediate co-worker influence
4	0 – 1 year	Occupational therapist	Never exposed
5	0 – 1 year	Physiotherapist	Never exposed
6	0 – 1 year	Speech therapist	Never exposed
7	> 2 years	Speech therapist & audiologist	Adopted from other provinces
8	> 2 years	Physiotherapist	Provincial physiotherapy forum
9	0 – 1 year	Speech therapist	University training influence
10	> 2 years	Physiotherapist	Supervisor influence
11	> 2 years	Occupational therapist	Provincial coordinator facilitation
12	> 2 years	Occupational therapist	Never exposed
13	0 – 1 year	Occupational therapist	Never exposed
14	> 2 years	Physiotherapist	Never exposed
15	0 – 1 year	Physiotherapist	Never exposed
16	0 – 1 year	Speech therapist and audiologist	Never exposed

3.3 RESULTS PART ONE: QUALITATIVE

Part one of the results describes the findings for the first and second objectives of the study. Major themes and their accompanying sub-themes that emerged from the study are presented. This study revealed a total of seven themes which emerged from the qualitative data.

The themes that emerged are as follows:

1) Familiarity and application
2) Guideline functions and features
3) Value of guidelines
4) Patient care
5) Barriers affecting guideline utilization
6) Communication, content and design improvements
7) Evaluations and staff training

The themes are presented together with their sub-themes and participant direct quotations are also used to provide rich descriptions. Results for the third objective will be presented in part two of this chapter.

3.3.1 **Description of Themes**

The themes are classified according to each study objective and discussed in various sections of this report. The first study objective is addressed by theme one to theme three, while the second study objective is addressed by theme four to theme seven. The qualitative results are presented under the following sections based on the study objectives: knowledge of stroke clinical practice guidelines, attitudes towards stroke clinical practice guidelines, practices related to stroke clinical practice guideline utilization, and strategies to improve the implementation of stroke clinical practice guidelines.

3.3.1.1 **Knowledge of stroke clinical practice guidelines**

In response to study objective one, the results reveal two themes linking to participant's knowledge and awareness of stroke clinical practice guidelines.

3.3.1.1.1 Theme 1: familiarity and application

Four subthemes emerged under this theme with participants indicating that they were aware of existence and perused, aware but never seen, complete non-exposure, and non-familiarity with meaning.

- Subtheme 1.1: Aware of existence and perused

Some participants indicated that they have heard about the existence of stroke clinical practice guidelines and have also perused it. However, they did not familiarize themselves with the content of the guidelines to gain an understanding. One participant mentioned that:

"I browsed through them [guidelines] because she [supervisor] told me to go through a whole lot of files, so I literally just browsed once and it's in and out." ***Participant 10.***

Another participant acknowledged that although she had never gone through the guidelines, she was aware that one can utilize them when the need arise:

"I have but I haven't really gone through them [guidelines]… I heard about them I think, if it wasn't last year then when I was still in Gauteng. .. I think it's that thing that they are here and if you need to look at them then you are more than welcome to." ***Participant 4.***

- Subtheme 1.2: Aware but never seen

Few participants further highlighted that although they were aware of the guidelines, they never saw stroke clinical guidelines at their respective hospitals. This is reflected by one participant who said:

"I think apparently they are somewhere in the file but I have never seen them." ***Participant 14.***

- Subtheme 1.3: Complete non-exposure

Some participants reported that they have never been exposed to stroke clinical practice guidelines. One participant reported:

"Ya well I would say obviously I didn't even know there was something like the clinical guidelines for specific treatments. For this hospital obviously I know there is not." ***Participant 1.***

Another participant supported this by saying:

"We don't have like a proper guideline where we have to follow what we are supposed to do" ***Participant 2.***

- Subtheme 1.4: Non- familiarity with meaning

Few participants admitted to not knowing what the meaning of a clinical practice guideline is. One of them could not differentiate between a clinical practice guideline and a protocol.

"I'm not sure whether it's the same thing or whether its protocol or clinical guidelines, whether they are the same thing or what, yes." ***Participant 11.***

Participants were also aware that there is a difference between a stroke clinical practice guideline and a stroke protocol. This view is supported by one participant who said:

"So the only thing I have seen here is basically protocols, it was showed to us but other than that I haven't seen [the] actual clinical guidelines." ***Participant 12.***

3.3.1.1.2 Theme 2: Guideline functions and features

Theme two is characterized by three sub-themes which reflect participants' knowledge and awareness of stroke clinical practice guidelines. The sub-themes are as follows: treatment procedure, diagnosis procedure, and features of a good quality guideline.

- Subtheme 2.1: Treatment procedure

Some participants explained what they understood about the functions and the meaning of a clinical practice guideline. As reflected by one participant, they felt that the guidelines provide guidance on patient treatment:

"*Apparently they [clinical guidelines] are protocols that we are supposed to follow in accordance to whatever condition you are treating, those are the basic steps that you're supposed to follow".* ***Participant 10.***

- Subtheme 2.2: Diagnosis procedure

Although sounding unsure, another participant indicated that the guidelines assist with the diagnosis of certain conditions.

"Is it not like a procedure on what to do for example, this disorder what are the procedures, the assessment tools, the instruments and stuff, ya." ***Participant 16.***

In addition to being used for diagnosis purposes, they are also reviewed on as regular basis to stay relevant. One participant said:

"Clinical guidelines, they help you understand the actual diagnosis on which ever diagnosis you treating and then at some point they go to be reviewed, they are read, they are checked and then as new research comes in they make amendments and they put somethings and minus somethings." ***Participant 12.***

- Subtheme 2.3: Features of a good quality guideline

The participants further provided seven features of a good quality guideline. They listed the following as critical components of a good quality guideline: objective oriented, specific to conditions, easy to navigate, evidence-based, contextualized, shorter length, condition definition, and picture illustration. Their responses are presented in table 3.2:

Table 3.2: Features of a Good Quality Guideline

Guideline Feature	Participant's Quotations
Objective Oriented	▪ *"And I think it would be nice to say why it is a priority, what is the goal for me as a therapist in the rural hospital,"* ***Participant 9.*** ▪ *"I think for a quality guideline you have to be able to answer your guideline and to say did I achieve it or did I not."* ***Participant 1.***
Specific To Conditions	▪ *"Also just for it to be specific I think that's also the main thing I think to have specific guidelines."* ***Participant 1.*** ▪ *"Maybe if they can be condition specific like if it's a stroke, they can add all the things that will be needed on strokes, unlike if it's made broad, it can have like, too many things that are not necessary"* ***Participant 5.***
Easy to Navigate	▪ *"I think it looks straight forward because the objectives are there, what is expected at community level, clinic level and hospital level."* ***Participant 4.*** ▪ *"I think the amount of information that is here is good enough to go for 10 pages because it's easy to read and it is understandable for a therapist, unlike something that has too much information."* ***Participant 5.***
Evidence-Based	▪ *"It [guideline] should be evidence based as well... Everything that they do should be research based."* ***Participant 8.*** ▪ *"What makes up a good quality guideline is regular research about like researching them more often."* ***Participant 13.*** ▪ *"Those people had to first conduct a research so it's not like from nowhere but it's something they have evidence about. So I think it's a very good thing that we always refer to literature".* ***Participant 16.*** ▪ *"What makes up a good quality guideline is regular research about like researching them more often, making sure that you review them and finding what's new and then you update your protocols that will make a good quality guideline."* ***Participant 13.***
Contextualized	▪ *"Bring it back home; bring it back to the setting. Talk to the staff there, ask them what works and what doesn't work and draft them into those guidelines. Look at the resources, look at the facilities, what do they have and what do they not have and actually draft it in accordance to that."* ***Participant 10.*** ▪ *"Can it please be contextualized or even if okay, they choose to keep it like this, just add on some of the things that will actually apply on the rural setting."* ***Participant 12.***
Shorter Length	▪ *"It is very small so we are more motivated to go through it, because if you have a document this big then ha-uh."* ***Participant 4.***
Condition Definition	▪ *"Uhm… I think the proper definition of the condition as well, which I don't see here will be important."* ***Participant 3.***

3.3.1.2 **Attitudes towards stroke clinical practice guidelines**

In response to study objective one, the results further revealed one theme that links to participant attitudes towards stroke clinical practice guidelines.

3.3.1.2.1 Theme 3: Value of guidelines

Theme three provides information about therapists' attitudes towards stroke clinical practice guidelines. There are six sub-themes that emerged which show participants' reflections on the value of utilizing the guidelines. The sub-themes are as follows: improved rehabilitation

process, comprehensive patient management, time saving, reference document, updated information provision, inter-professional learning opportunity.

- Subtheme 3.1: Improved rehabilitation process

Some of the participants indicated that using stroke clinical practice guidelines would improve their rehabilitation with patients. Even though they are currently not using these clinical practice guidelines they agreed that patient outcomes would be improved if they were utilized. This view is reflected by one participant who said:

"I think it will just make it more focused, because I think guidelines do give kind of a goal in a way so I think treatment of the patients will be more focused" ***Participant 9.***

Another participant agreed and mentioned ease of rehabilitation as another important factor:

"If I don't have the guideline I have to first figure out, get my act together about what I'm going to do whereas if you have them I think it just makes the process much easier." ***Participant 1.***

Another participant indicated that using stroke clinical practice guidelines will boost his confidence when managing stroke patients. He is quoted saying:

"I would love to have these guidelines, I cannot say I am confident with stroke patients but if there is a guideline that is gonna help me I'm sure I can develop more and one of the days I can be confident enough" ***Participant 15.***

- Subtheme 3.2: Comprehensive patient management

Few participants mentioned that using stroke clinical practice guidelines would allow comprehensive patient management. This view is expressed by one participant who said:

"I think then you know what is expected of you, say a patient is coming, you know that when you do the interview or other things or when you do your thorough assessment these are the things that you really need to go through so that you don't really forget anything." ***Participant 4.***

- Subtheme 3.3: Time saving

Although they still referred to clinical practice guidelines as protocols, few participants mentioned that it would save on time spent with patients.

"Using the protocols would just enable me to quickly assist the patient in terms of time management. So cut off the time" ***Participant 12.***

- Subtheme 3.4: Reference document

Some of the participants mentioned that even though they have the knowledge of how to manage stroke patients, having the stroke clinical practice guidelines would serve as a reminder and a reference point if they need more information on how to better manage stroke patients. Two participants are quoted to reflect this:

"If there's a clinical guideline for stroke that says do this and this and first try this, at least you know that maybe when you are running out of ideas then you have clinical guidelines to refer to."
Participant 15.

"Obviously the guidelines would change the way I do patient care because I can at least have a reference point where I can always go back and check"
Participant 8.

- Subtheme 3.5: Updated information provision

Some of the participants reported that clinical practice guidelines are evidence based, therefore using them would keep their knowledge of stroke updated due to the constant research being conducted on stroke. A participant responded by saying:

"With time and as years go by, you know things change, even at the university, treatments, protocols change all the time, research is being done all the time, so obviously you need to always like update yourself and go back sometimes" ***Participant 8.***

- Subtheme 3.6: Inter-professional learning opportunity

Few participants mentioned the value of inter-professional learning opportunity. One participant said:

"If there is something the patient might be presenting with, that I'm not sure of, I will do research about it then come back and present in our departments so that I can teach the other guys that a neuro patient might present with this kind of thing, So as a therapist you can do this and this and this."
Participant 11.

3.3.1.3 **Practices related to stroke clinical practice guideline utilization**

In response to study objective two, two themes emerged that reflected explaining the practice dynamics related to stroke clinical practice guidelines.

3.3.1.3.1 Theme 4: Patient care

Theme four consists of six sub-themes which highlights participants' approaches for patient management. The sub-themes are as follows: university training and clinical skills reliance, evidence based reliance, peer consultation reliance, mixed approach, patient's symptom directed therapy, family education to carry over home program.

- Subtheme 4.1: University training and clinical skills reliance

The results reveal that some participants reported their preference of using prior knowledge and clinical skills acquired from their university training to manage stroke patients. One participant who relies on university training mentioned that:

"I still rely mainly on my undergraduate knowledge of CVA patients and the fact that obviously when the patient is in the ward I need to check 1st if clinically the patient is stable before I can start any rehab. Even now, I still rely on my undergraduate yeah" ***Participant 8.***

Another participant mentioned their reliance on clinical skills:

"I base it on my clinical experience because the thing is that protocol does not have the detailed information, yes." ***Participant 11.***

- Subtheme 4.2: Evidence based reliance

Few participants rely mainly on researching ways to manage stroke patients, especially if they are unsure of the symptoms the patient presents with. This is shown by one participant who said:

"If I encounter like a disorder I don't really know how to treat, I definitely always look for articles and new techniques and find out what's out there." ***Participant 9.***

- Subtheme 4.3: Peer consultation reliance

Some participants prefer to consult with peers whom they work with. One participant reported:

"Consulting with colleagues so usually my OT, psychologist, my dietician if there are comorbidities, and then my speech and audiologists, social worker if there are any social problems and maybe some of the OTTs (Occupational Therapy Technicians) in the community and the doctors."
Participant 14.

- Subtheme 4.4: Mixed approach

One participant indicated that she relies mainly on a combination of approaches for managing her stroke patients. She said:

"Yeah I think it's the combination of my clinical background, the information from my colleagues as well as the person who is accompanying the patient." ***Participant 7.***

- Subtheme 4.5: Patient's symptom directed therapy

Some participants indicated that their therapy provision is mainly based on the symptoms that the patients present with at the time of consultation. A participant reported saying:

"Okay, I look at the type of stroke that the patients has and look at how does the person present and then look at the different approaches that we can use." ***Participant 13.***

- Subtheme 4.6: Family education to carry over home program

Few participants mentioned that as part of their stroke patient management, they prefer to educate the family members or the caregiver of the patient on how to continue with rehabilitation of the patient at home. One participant said:

"We don't have as many resources as we would like and, keeping family members heavily involved I think it's very important" ***Participant 9.***

3.3.1.3.2 Theme 5: Barriers affecting guideline utilization

The results further reveal four sub-themes which highlights barriers towards utilization of stroke clinical practice guidelines. These are: content challenges, human and material resources, environment and context factors, and previously gained knowledge (Figure 3.1).



Figure 3.1: Barriers Affecting Guideline Utilization

- Sub-theme 5.1: Content challenges

Participants raised challenges relating to the content of the guidelines. These include: non-flexibility, non-contextualization, non-comprehensive document, lack of evidence, lack of regular review, length challenges. To support this, one participant reported saying:

"I think it wouldn't make much difference because patients differ, if I have a certain guideline, I might follow all those things but they are not necessary on the patient that I have now. Some will need it and some won't need it, so I don't think it is that necessary, at all times." ***Participant 5.***

Another participant mentioned that these documents were brief and did not include every aspect of stroke management:

"The patient might be presenting with maybe RVD [retroviral disease], or other conditions that might affect the patients function so, they didn't add those kind of things. With them a stroke patient is still presenting with hemiplegia and it's just a straight forward thing, but there are some other clinical things they haven't added." ***Participant 11.***

One participant indicated that the long length of clinical practice guidelines is one of the reasons clinicians do not engage with the document.

"I know a lot of people are not big on reading research papers so; a lot of people might lose focus when they have to read it so they might not finish the whole paper. It's basically that and I feel like it's really, it's sort of lengthy." ***Participant 14.***

Some of the participants indicated that they do not use the documents given to them because they are believed to be outdated and do not get reviewed. One participant said:

"Honestly the guidelines I feel like they need to be revised every now and cos they probably were drafted a long time ago and there's new evidence and new literature. Some of us are fresh from university and we know, not to offend anyone but we know a bit better". ***Participant 10.***

Another participant supported him by saying:

"With the protocols, they just remain like that, they are inside the cupboard you just go there and read them, if you go back and look it's something someone used in 1999 and in 2016 I'm still the same protocol, definitely between '99 (1999) and 2016, something has changed, there's a lot that has changed so with clinical guidelines, they are reviewed and checked as time goes on, yet protocols are stuck like that." ***Participant 12.***

- Subtheme 5.2: Human and material resources

Participants indicated challenges relating to human and material resources. These included: lack of therapy resources, increased workload, reading time challenges, time management dynamics, shortage of staff, supervisor guidance, no follow up. Most of the participant reported that the lack of equipment is the biggest barrier, one participant said:

"Not really, they are not really relevant because they, ok when they talk about function, with us in the department we have got only ADL, where we do self-care only, we don't have equipment, resources for leisure, we don't have resources for social, we don't have resources for work where we can assess those kind of patients, so yeah, it's just one occupational area that we can treat the patient yes." ***Participant 11.***

Two participants mentioned that reading clinical guidelines created more work and there is insufficient time to read them:

"Haha it's more admin. Yeah I mean, it's not always possible to pull out a document and sit and look through it and yeah, so I kind of have to be reminded if I need to look at it." ***Participant 9.***

"There is quite a lot of work as we are all inside the hospital because even though it's not actual patient work, it's gonna be admin. But if I do have time, I try." ***Participant 12.***

One participant mentioned that she was shown the documents but there was no follow up to check whether she is utilizing them:

"*Well they just showed me and that was it. I never heard from anyone else, nobody came to me after that and said so let's go through the clinical guidelines for this and this and this, no."* ***Participant 10.***

- Subtheme 5.3: Environment and context factors

The following environmental and context factors were raised as barriers that affect utilization of guidelines: loud environment, rural setting challenges, and cultural dynamics. One participant reported that:

"They're shouting, they're calling you, they're screaming, I wouldn't actually focus." ***Participant 12.***

Another participant reported the rural setting as a challenge:

"You have the theoretical basis and when you enter into a setting especially when it is as rural as we have here it definitely completely differs….. So here I don't usually use clinical evidence because of the setting I would say" ***Participant 1.***

One participant reported culture as a barrier to utilizing clinical guidelines:

"Like you know what I have realized since I started working is that CVA has got different types of CVAs and all of them will present differently, and obviously the treatment will also be different, also the cultural backgrounds and things like that." ***Participant 8.***

- Subtheme 5.4: Previously gained knowledge

Participants indicated that existing academic experience and short course exposure prevents using the guidelines. One participant mentioned that the experience that she gained from university training is sufficient and in line with what the guidelines recommend. She reported that:

"The information I read inside, it has quality, it still refers to what I was taught when I was at school and some of the things that I still do." ***Participant 15.***

Another participant indicated that she has attended extra courses on stroke management.

"I think maybe because I've been using the knowledge that I've gained when I was that side [previous employment] so maybe it's because we've been going through courses." ***Participant 4.***

3.3.1.4 **Strategies to improve the implementation of stroke clinical practice guidelines**

In response to study objective two, the results further reveal two themes that outline strategies for improving the implementation of stroke clinical practice guidelines namely: communication, content, and design improvements and evaluations and staff training.

3.3.1.4.1 Theme 6: Communication, content and design improvements

This theme is characterized by three sub-themes. These are: Change in mode of circulation, design change, and content addition.

- Subtheme 6.1: Change in mode of circulation

Some of the participants recommended that the mode of guideline circulation be changed. Their recommendations included the use of therapy forums, sending guidelines via emails, and developing a smartphone app. One participant explained the necessary changes:

"We have different forums in the province, so from that forum, the information can be dispersed from there so that people who are attending, sometimes we do have representatives from different hospitals, that representation can actually take the information to their respective hospitals then it will be discussed at the hospital level." ***Participant 7.***

Another participant mentioned the use of smartphone technology:

"Maybe if they had some sort of app because everyone is forever on their phone, so like have a small app or whatnot so you can quickly go through for reference, it would work wonders" ***Participant 14.***

- Subtheme 6.2: Design change

Six ways to improve the design of clinical practice guidelines were recommended by the participants. These include: pamphlet design, shorter version, picture addition, outline developers, outline development date, and letterhead inclusion.

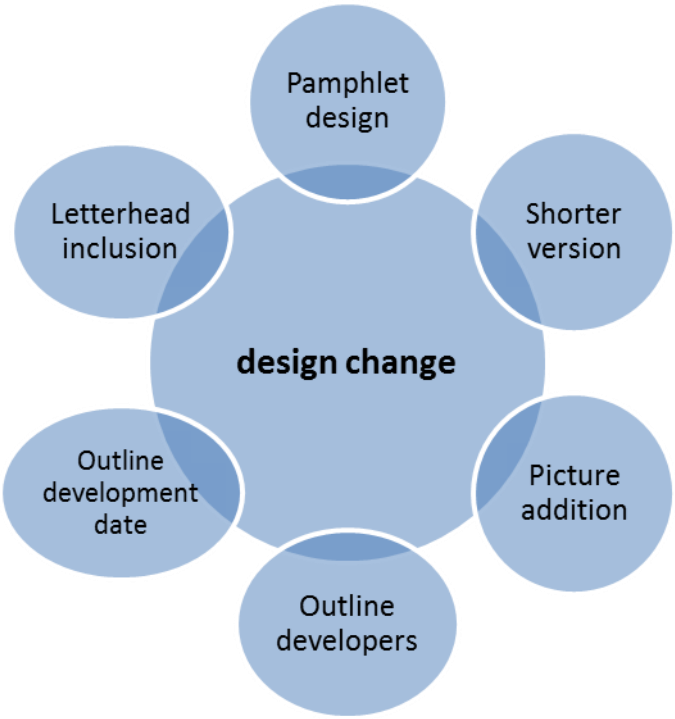


Figure 3.2: Recommendations for Improving the Design of Clinical Practice Guidelines

Few participants mentioned that the guidelines should be designed differently by summarizing them on a pamphlet. One participant said:

"Even like in a pamphlet kind of way cos it's easy to read a pamphlet than a whole A4 page like it's a whole stack of pages" ***Participant 14.***

Shortened version of a guideline was also recommended by a participant as part of design change. She said:

"I prefer a shorter version… If it's possible they can have a longer version and a shorter version." ***Participant 12.***

Another participant recommended the addition of pictures onto guidelines:

"Because some people man, to just go through the paper like this one you know you are done with your degree and don't have time to study and all that, it will make your life difficult. So if there are pictures and that can encourage you to look in more at what's happening." ***Participant 3.***

Some participants recommended the outline of developers and the date of guideline development. Two participants are quoted saying:

"The person who wrote they must even write their names, even phone numbers for if maybe we want to query something we can call them." ***Participant 2.***

"It [protocol] doesn't even say if it's Gauteng or Mpumalanga, which year it was done" ***Participant 4.***

Another recommendation was to include a letterhead on the document:

"Firstly, with regards to letter heads and everything, it has to show that it's from the department of health." ***Participant 10.***

- Subtheme 6.3: Content addition

A contrasting view by one therapist was an increase in content:

"Maybe one thing that is missing in the community level is that they could maybe add the home visits, because I don't see it here so maybe if they can have thorough, especially in OT [occupational therapy], cos [because]I think that's where we actually play a bigger role" ***Participant 4.***

3.3.1.4.2 Theme 7: evaluations and staff training

Further recommendations were made regarding guideline evaluations and staff training. Five sub-themes emerged from this theme and they are: quarterly staff evaluation and audit reviews, departmental in-service training, situational analysis and contextualization, national standardization of guidelines, and multidisciplinary task-team introduction.

- Subtheme 7.1: Quarterly staff evaluation and audit reviews

Some of the participants reported that they need to be evaluated on whether they are complying with the use of stroke clinical practice guidelines or not. One participant is quoted saying:

"Because they do have two or three meetings for rehab, so if we have to report back to say we have been using clinical guidelines and this is the feedback we have to give for HB, and then we are more compliant. Because they send, but there's no feedback or evaluation. They are just there."
Participant 4.

She was supported by another participant who said:

"Maybe…… I know we do have evaluations every quarter, but maybe if evaluations go more in line with the guidelines so you can actually check against you know, did we do this did we do that."
Participant 9.

- Subtheme 7.2: Departmental in-service training

Few participants suggested the use of in-service training to help inform them about clinical guidelines. One participant mentioned:

"Maybe they can in-service us on these guidelines, then we are aware of these guidelines that are developed" ***Participant 5.***

Another participant mentioned the importance of providing in-service for newly appointed therapists. She said:

"I think whenever a newly employed personnel, they need to be told about these guidelines, and if need be they also need to have workshops where we sit and we discuss the guidelines so that everybody is aware that you know what, you not just working nje in the dark but there are guidelines that will guide you" ***Participant 8.***

- Subtheme 7.3: Situational analysis and contextualization

Few participants mentioned the need to conduct a situational analysis. One participant is quoted saying:

"*It [clinical practice guideline] can go up to a level sort of like the clinic setting, if we do have therapists at a clinic because they are gonna be different. But you find that we might be better off than a person based at a clinic, so just to make sure that it accommodates everyone, so we know a stroke is a stroke, we do know that people represent differently but then what we don't know is the institutions, so what they need to bear in mind is that the institutions are not gonna be the same, the context and theory behind stroke has always been the same but then now where the therapy has to be rendered, that's where its gonna different.* ***Participant 14.***

- Subtheme 7.4: National standardization of guidelines

Few participants reported that guidelines must be nationalized. A participant said:

"It's like even when you, even when I'm in like, let me say Joburg Gen (Charlotte Maxeke Johannesburg Academic Hospital), I know this is standardized national protocols that I know everywhere where I'm going to work even if I'm not in this hospital, I know that these are the guidelines that are being used from the national" ***Participant 8.***

- Subtheme 7.5: Multidisciplinary task-team introduction

Few participants suggested the introduction of a task-team that is comprised of the different rehabilitation professions. One participant said:

"Maybe if they do task team, so say each hospital has a representative from [name of hospital] etc., and like each section can give feedback to that person and whoever is representing rehab, when they go to the meetings, they can give feedback, and it must be honest, unlike giving feedback which doesn't make sense. So maybe if there could be a task team from each hospital, we can ensure that the guidelines are being used by the therapists." ***Participant 4.***

3.4 RESULTS PART TWO: QUANTITATIVE

Part two of the results describe the findings for the third objective of the study. It presents the scores and quality rating of the clinical guidelines found at the three study sites.

3.4.1 Guideline Checklist Scoring and Rating

3.4.1.1 Guideline checklist scoring

The average quality rating for the clinical guidelines is presented for each of the questions on the iCAHE checklist, per profession. The results from the guideline quality checklist are presented per profession as outlined in tables 3.3, 3.4, and 3.5.

Physiotherapists

Only four out of the 14 questions on the guideline checklist were answered positively (Table 3.3). All (100%) the participants indicated that guidelines are readable and easy to navigate. Participants also noted that guidelines were readily available in full text (71.4%) and outline the purpose and target users (7.4%). Just over 40% of the participants indicated that guidelines provide a summary of its recommendations. The therapists found that the stroke guidelines provided to them did not meet the good quality requirements as set out by the iCAHE guideline checklist on questions 2, 4, 5, 6, 7, 8, 9, 10, 11 and 12.

Table 3.3: Physiotherapists' Checklist Scoring

Questions	iCAHE Checklist	Quality Scoring
	N	%
1. Is the guideline readily available in full text?	5	71.4
2. Does the guideline provide a complete reference list?	0	0
3. Does the guideline provide a summary of its recommendations?	3	42.9
4. Is there a date of completion available?	0	0
5. Does the guideline provide an anticipated review date?	0	0
6. Does the guideline provide dates for when literature was included?	0	0
7. Does the guideline provide an outline of the strategy they used to find underlying evidence?	0	0
8. Does the guideline use a hierarchy to rank the quality of the underlying evidence?	0	0
9. Does the guideline appraise the quality of the evidence which underpins its recommendations?	0	0
10. Does the guideline link the hierarchy and quality of underlying evidence to each recommendation?	0	0
11. Are the developers of the guideline clearly stated?	0	0
12. Does the qualifications and expertise of the guideline developer(s) link with the purpose of the guideline and its end users?	0	0
13. Are the purpose and target users of the guideline stated?	5	71.4
14. Is the guideline readable and easy to navigate?	7	100

Occupational therapists

Five of the fourteen questions on the iCAHE guideline checklist were rated positively by the occupational therapists (Table 3.4). The majority of the occupational therapists agreed that the purpose and target users of the stroke guideline are stated (80%) and that the guideline is readable and easy to navigate (80%). Some of the therapists agreed that the stroke guideline is readily available in full text (60%). Few occupational therapists agreed that the stroke guideline uses a hierarchy to rank the quality of the underlying evidence (20%) and that the qualifications and expertise of the guideline developer(s) link with the purpose of the guideline and its end users (20%). The occupational therapists found that the stroke guidelines provided to them did not meet the good quality requirements as set out by the iCAHE guideline checklist on questions 2, 3, 4, 5, 6, 7, 9, 10, and 11. The occupational therapists had no common (100%) rating on the guideline checklist.

Table 3.4: Occupational Therapists' Checklist Scoring

Questions	iCAHE Checklist	Quality Scoring
	N	%
1. Is the guideline readily available in full text?	3	60
2. Does the guideline provide a complete reference list?	0	0
3. Does the guideline provide a summary of its recommendations?	0	0
4. Is there a date of completion available?	0	0
5. Does the guideline provide an anticipated review date?	0	0
6. Does the guideline provide dates for when literature was included?	0	0
7. Does the guideline provide an outline of the strategy they used to find underlying evidence?	0	0
8. Does the guideline use a hierarchy to rank the quality of the underlying evidence?	1	20
9. Does the guideline appraise the quality of the evidence which underpins its recommendations?	0	0
10. Does the guideline link the hierarchy and quality of underlying evidence to each recommendation?	0	0
11. Are the developers of the guideline clearly stated?	0	0
12. Does the qualifications and expertise of the guideline developer(s) link with the purpose of the guideline and its end users?	1	20
13. Are the purpose and target users of the guideline stated?	3	80
14. Is the guideline readable and easy to navigate?	4	80

Speech therapists and audiologists

Seven out of fourteen questions on the iCAHE guideline checklist were rated positively by the speech therapists and audiologists (refer to table 3.5). All the speech therapists and audiologists agreed that the stroke guideline provides an anticipated review date (100%), that the purpose and target users of the guideline are stated (100%), and that the guideline is readable and easy to navigate (100%). Most of the speech therapists and audiologists agreed that the stroke guideline is readily available in full text (75%), and that there is a date of completion available (75%). The question on whether the guideline provides a summary of its recommendations and its ability to provide hierarchy to rank the quality of the underlying evidence was fairly rated (25%). The therapists found that the stroke guidelines provided to them did not meet the requirements for good quality as set out by the iCAHE guideline checklist on questions 2, 6, 7, 9, 10, 11 and 12.

Table 3.5: Speech Therapists Checklist Scoring

Questions	iCAHE Checklist	Quality Scoring
	N	%
1. Is the guideline readily available in full text?	3	75
2. Does the guideline provide a complete reference list?	0	0
3. Does the guideline provide a summary of its recommendations?	1	25
4. Is there a date of completion available?	3	75
5. Does the guideline provide an anticipated review date?	4	100
6. Does the guideline provide dates for when literature was included?	0	0
7. Does the guideline provide an outline of the strategy they used to find underlying evidence?	0	0
8. Does the guideline use a hierarchy to rank the quality of the underlying evidence?	1	25
9. Does the guideline appraise the quality of the evidence which underpins its recommendations?	0	0
10. Does the guideline link the hierarchy and quality of underlying evidence to each recommendation?	0	0
11. Are the developers of the guideline clearly stated?	0	0
12. Does the qualifications and expertise of the guideline developer(s) link with the purpose of the guideline and its end users?	0	0
13. Are the purpose and target users of the guideline stated?	4	100
14. Is the guideline readable and easy to navigate?	4	100

3.4.1.2 **Guideline quality rating per profession**

Using the guideline rating formula presented in Chapter 2 (2.9), the results reflect that the speech therapists and audiologists scored their stroke guideline 35.71% on the iCAHE guideline checklist; the physiotherapists scored 20.41%, and the occupational therapists 18.57%. This is presented in figure 3.3.

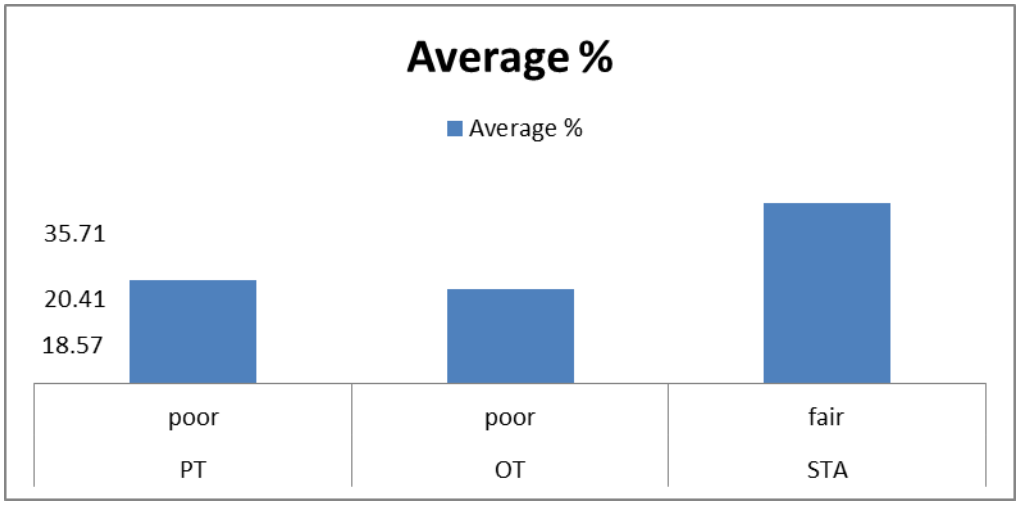


Figure 3.3: Guideline Quality Rating

3.5 CONCLUSION

Face to face in-depth interviews provided rich data that resulted in seven major themes, according to the study objectives. The iCAHE guideline quality checklist provided the percentage scoring for each of the guideline for the three professions. This allowed for the rating of the stroke guideline quality. Discussions regarding the research findings will be presented in the next chapter.

CHAPTER FOUR

4. DISCUSSION OF FINDINGS

4.1 INTRODUCTION

This chapter discusses and interprets the findings of the previous chapter. This chapter is guided by the study objectives; however, the qualitative component will be discussed based on the themes and subthemes that emerged. Findings from the qualitative component are discussed first, followed by the quantitative component of the study. This chapter aims to address and discuss the research question. The limitations arising from this study are also presented.

4.2 FINDINGS AND INTERPRETATIONS

Qualitative Component

This study explored the perceptions of stroke clinical practice guidelines amongst allied rehabilitation practitioners in rural Bushbuckridge. The findings reveal poor knowledge about stroke clinical practice guidelines among rehabilitation therapists in the Bushbuckridge local municipality. While some therapists had perused the guidelines, most therapists had never come across them, suggesting that they were not aware of their existence. Contrary to the findings of this study, many studies report that clinicians are aware of clinical practice guidelines, though they are not implementing them (Bennett et al., 2003; Bekkering et al., 2005; Ross & Davidson 2006; Salbach et al., 2007). These studies account their findings to numerous methods of disseminating clinical guidelines that are currently not being used in the rural South African context. Such methods include the active strategy of guideline implementation as well as dissemination by mail.

There is dearth of literature regarding rehabilitation therapists' awareness and knowledge of clinical guidelines. A study that investigated clinician's awareness of clinical practice guidelines for chronic kidney disease reported a very low awareness. The authors related their findings to the lack of incorporation of clinical guidelines into the medical training program (Agrawal et al., 2008). The same conclusion could also be drawn in the South African context. A systematic review conducted by Loudon et al. (2014) reported that awareness of CPGs amongst patients and the general public was very low. Almost all their study participants had never been exposed to CPGs but agreed that they would love to have the documents made available to them. Even though their study was conducted on

patients and the general public, their findings are consistent with the findings from this study.

This study further reveals that participants were not familiar with the meaning of a clinical practice guideline. The study participants could not differentiate between a clinical protocol and a clinical practice guideline. In a study conducted by Hewitt-Taylor (2004) similar findings were reported as clinicians often confused the two terms and/or sometimes used them interchangeably. Hewitt-Taylor (2004) makes the distinction between a clinical protocol and a clinical practice guideline by stating that a guideline is a principle or criterion that guides or directs action, while a protocol is a rule that relates to a procedure. The lack of distinction suggests that the therapists are not educated on the differences between the two and that the mode of document transfer to the district health facility might be exacerbating this. This finding also highlights the lack of training in public health facilities, especially in the more disadvantaged environments such as rural facilities.

Functions of a clinical practice guideline have been described in a number of studies. A study by Rosoff (2012) described a clinical practice guideline as a document that is intended to assist in making decisions regarding the assessment and treatment of patients. This finding is consistent with the findings of this study as reflected by the therapists when they were describing guideline functions and features. This shows that therapists, even in rural district hospitals understand the functions of a clinical practice guideline. This shows that they might utilize guidelines if they are made available to them.

A significant finding was that some therapists in this study could identify features of a good quality guideline. Most of the features identified by the participants such as easy to navigate and evidence based are consistent with the requirements of a good quality guideline recommended by the international Centre for Allied Health Evidence (iCAHE) (Grimmer et al., 2014). Features that are not presented by the iCAHE such as “shorter length” and “specific to conditions” have been reported by other studies as important considerations for a good quality guideline (Joubert et al., 2008; Qaseem et al., 2012). It should therefore be noted that clinical practices guidelines need to have the highest level of good quality in order to be accepted by intended end-users such as rehabilitation therapists (Grimmer et al., 2014).

Therapists in rural Bushbuckridge had positive attitudes regarding the value of stroke clinical practice guidelines. This is reflected by their comments on the value of guidelines such as creating interprofessional learning opportunities “…*I can teach the other guys that*

a neuro patient might present with this kind of thing, So as a therapist you can do this and this and this.". Although most of the therapists have not been exposed to clinical practice guidelines, they had an understanding that having access to them and utilizing them would improve their stroke patient care. This reflects an opportunity and willingness of therapists to use stroke guidelines, a finding that can be used by guideline developers to improve and strengthen the development and implementation of clinical guidelines.

A study conducted by Solà et al. (2014) reported that physicians who participated in their qualitative study agreed that there is value in utilizing guidelines. They reported on a number of values which are consistent with the finding of this study. These values included the benefit of clinical practice guidelines to serve as a reference document that offers updates on new evidence that can be translated into clinical practice, the ability of a clinical guideline to save the physician time during patient treatment as well as the ability of clinical guidelines to provide information that allows for holistic patient management (Solà et al., 2014).

Newly qualified therapists (community service therapists) in this study had very little experience in managing stroke patients, their reliance was mainly on undergraduate university training "*I still rely mainly on my undergraduate knowledge of CVA patients*…". They reported that having access to clinical practice guidelines would improve their rehabilitation process with stroke patients. This highlights an unmet need to provide training in public health facilities where all community service therapists are employed as they felt that using stroke clinical practice guideline would make them feel more confident in managing stroke patients. A review by Spiers and Harris (2005) also pointed out similar conclusions that stated that more support should be provided to allied health professionals working in rural and remote communities in order to improve the health outcomes of rural patients.

Other studies state that therapists generally have a positive attitude towards clinical practice guidelines (Bennett et al., 2003; Ross & Davidson 2006). These therapists agreed that they could utilize guidelines if they are properly implemented. When compared to a study by Bekkering et al. (2005), therapists in this study reported that using clinical practice guidelines would save them time during patient rehabilitation. Bekkering and colleagues (2005) found that guideline utilization was regarded as time consuming by physiotherapists. The differences could be because the therapists in the current study have not utilized guidelines before, as such, their knowledge on the time it takes to implement a guideline is very limited. This further highlights the lack of training for therapists in this study context.

Similar to a report by Muckart (2013), this study reveals that very few therapists relied on evidence based documents for patient care. With regards to preferred methods of patient care, therapists in this study preferred using their clinical experience and consulting with their peers rather than using clinical evidence-based guidelines. These findings are consistent with those reported by Bennett and colleagues in a 2003 publication.

Therapists in this study also incorporated providing education to the patient's family so that they may continue therapy at home *"We don't have as many resources as we would like and, keeping family members heavily involved I think it's very important".* Loudon and colleagues (2014) reported that patient caregivers are most likely to use clinical guidelines to plan the questions that they would ask the clinicians during their next encounter. Not only would they want to use if for doctor communication; they also felt that it would be a very useful tool to use independently outside the clinical setting. This highlights that clinical guidelines have the potential to strengthen recovery of patients at home and possibly reduce the amount of patient visits to the clinical setting. This is very important particularly for patients living in rural areas who often have to travel far to their nearest public health care facility.

This study further reveals barriers to guideline utilization and evidence based practice by the rehabilitation therapists. The barriers were related to the content of clinical guidelines such as lack of contextualization and non-flexibility. The therapists in this study reported that the rural nature of their environment requires guidelines that are relevant and appropriate to rural contexts. This is a finding that has been reported in other similar studies (Sein & Tumbo, 2012; Solà et al., 2014).

Also, the overcrowded and busy nature of the rural public health hospitals makes it difficult for the therapists to read and implement clinical guidelines therefore specific times need to be set aside to engage guideline discussions. As such, therapists do not accept these documents in the current form. O'Donnell (2003) suggests that clinical practice guidelines should first be piloted in order to improve their relevance to the specific context. In the current study, a significant finding regarding the content of the clinical guidelines provided to these therapists is that the therapists reported that these clinical guidelines lack evidence and they are not reviewed regularly. This indicates that these clinical guidelines provided to therapists are not evidence based and/or are using outdated evidence. This has serious repercussions for stroke patient outcomes and may lead to a slow functional recovery for

the patients if the therapists implement these guidelines in their current form. This could worsen the already poor outcomes of stroke patients' recovery in rural areas.

In addition, human and material resources such as lack of time to read guidelines and shortage of staff were also found to be barriers. This is especially because rural district hospitals have shortage of human resources and most of the therapists' time is spent on treating patients, leaving little to no time for reading guidelines. In their study undertaken in a rural province in South Africa, Sein and Tumbo (2012) identified that quality supervision, adequate opportunity to experiential learning, good support system and a reasonable work load are some of the facilitators to an effective medical intern training program. Ross and Davidson (2006) reported that lack of access to evidence was a barrier to physiotherapists' utilization of clinical practice guidelines. This finding is similar to the current study which alludes that practicing in a rural environment limits access to guidelines.

To further augment guideline practices in a rural setting, this study provides strategies to improve the dissemination and implementation of stroke clinical practice guidelines such as staff training and changing the design and content of the current clinical guidelines disseminated in rural district hospitals. According to the therapists, these are currently not in place and would play a major role in improving the implementation of clinical guidelines in their local context if implemented. These findings are consistent with findings from Bouter et al. (2005) and Bekkering et al. (2005) who state that the mode of clinical guideline dissemination ultimately affects guideline utilization.

Whilst Bekkering et al. (2005) noted variation in guideline dissemination which they also observed as being variable in line with the resources of a particular country, the current study findings show that therapists preferred clinical guidelines to be disseminated using e-mail, provincial rehabilitation forums, and developing a smartphone app for guidelines. This is an important finding for guideline developers and implementers who need to consider the use of technology when disseminating clinical practice guidelines. It was also interesting that participants in the current study preferred emails as a mode of disseminating guidelines even with the reported problems of internet connectivity in rural areas. This highlights the need to strengthen internet connectivity in public health facilities to make service delivery more efficient.

Another interesting finding is that the rural therapists also preferred stroke clinical guidelines to include pictures and to be designed in a pamphlet format, a finding that has not been reported in literature. Due to the reported lack of time to read and implement

clinical guidelines, the therapists recommended that stroke clinical guidelines should have a shorter, summarized version that is quick to follow and implement. It is expected that this could improve uptake.

Currently there is neither training nor implementation strategy on how best to use guidelines. The therapists in this study suggested training and evaluation on how to implement stroke clinical practice guidelines. Their view was that training would measure effectiveness of the strategy and assess knowledge and understanding of the practitioners. This is in keeping with recommendations of Bekkering et al. (2005) who proposed an active strategy for guideline implementation that included interactive education and discussion sessions, feedback, and reminders to physiotherapists. Their research findings reported on a correlation between workplace based initiative and corresponding improvement in the uptake of clinical practice guidelines. The same strategy could be applied to stroke clinical practice guidelines in rural Bushbuckridge municipality.

Quantitative Component

Overall, the guideline quality scoring for each profession on the stroke clinical guidelines at Bushbuckridge local municipality was not satisfactory. All three categories of allied rehabilitation practitioners submitted an iCAHE score below of 50%, which represented a poor to fair quality.

The stroke clinical practice guideline provided to physiotherapists and occupational therapists were of poor quality compared to the guidelines for speech therapists and audiologists which were of fair quality. This is a significant finding for stroke guideline developers in the field of rehabilitation. The low scoring by the therapists could be directly proportional to the low uptake of these stroke guidelines. Even though speech therapists and audiologists scored their guidelines slightly higher, their overall uptake was still very low.

Physiotherapists had only one question on the iCAHE guideline checklist that had a common positive response for the question that assessed guideline readability and ease of navigation. For occupational therapists, with a positive score for only about a third of the questions, this was lower than the speech therapists and audiologists scoring which received positive scores for 50% of the questions. Interestingly though for occupational therapy stroke guideline, out of the 14 questions posed on the iCAHE checklist, there was not one single question where occupational therapists had common positive score. This finding means that the therapists did not agree that the stroke guideline meets a criterion

on the iCAHE checklist. On the other hand, for speech therapists and audiologists, there were three questions where all the therapists had a similar positive score. These similarities are important for guideline developers as they indicate what aspects of the guidelines need to be improved to better their quality (Grimmer et al., 2014).

Overall, the therapist's lack of utilization of the clinical practice guidelines could be related to a perceived poor quality based on poor recommendations. This has been reported in literature which stated that the way clinicians perceive the quality of a clinical practice guideline affects its utilization (Cabanna et al., 1999; Grimmer-Somers et al., 2007). It is possible that this perception may also be influenced by the [rural] context. According to research conducted by Wiseman et al. (2013), stroke clinical practice guidelines should meet the requirements as set out by the iCAHE checklist to improve acceptance by rehabilitation therapists, and ultimately implementation. The differences in quality rating of the guideline could indicate that the guideline developers for the respective professions did not collaborate during development of the guidelines. Monaghan et al. (2005) are of the view that collaborating and reaching consensus during development of stroke guidelines could lead to improved quality. This may in turn translate to better utilization and ultimately better patient outcomes. As stroke is a condition that requires a multidisciplinary approach according to Abdul Aziz et al. 2014) clinical practice guidelines intended for stroke management should be developed as a multidisciplinary initiative with input from all the stakeholders.

4.3 **STUDY LIMITATIONS**

This study focused on only one district in the Mpumalanga province thus the results from this sample may not be generalized to other districts. Participation in this study was voluntary, not all the eligible therapists participated in this study. This could skew the results because persons with an interest in clinical guidelines or affected by clinical guidelines were likely to participate in the study. The data collection period was short, the researcher left out therapists who were on extended leave and they might have contributed valuable insight into the research topic.

4.4 **CONCLUSION**

This chapter discussed both qualitative and quantitative findings as guided by the study objectives. The research question was addressed and the limitations arising from the study were also stated. Conclusions and recommendations that arise from this study will be provided in the next chapter.

CHAPTER FIVE

5. CONCLUSIONS AND RECOMMENDATIONS

This chapter concludes the study by providing recommendations for guideline developers and heads of therapy departments/therapy directors. It also provides recommendations for future research in this field.

5.1 CONCLUSION

This study sought to explore the perceptions and assess the quality of stroke clinical practice guidelines amongst allied rehabilitation practitioners based in rural primary care hospitals in the Bushbuckridge local municipality. In conclusion, this study found that therapists in rural Bushbuckridge have no knowledge and awareness of stroke clinical practice guidelines even though the guidelines are made available to the therapy head of each district hospital. Even though these therapists believe that using guidelines would improve their patient management, they did not utilize them because they were unaware of their existence. The poor and fair quality rating of these guidelines by the therapists further indicated why therapists who have been exposed to these guidelines reject them, resulting in poor uptake. The need to develop multidisciplinary stroke clinical practice guidelines was also highlighted. This study has highlighted the role that the [rural] context must be considered when designing and implementing clinical guidelines.

5.2 RECOMMENDATIONS

The following recommendations are provided to stakeholders who are responsible for developing clinical practice guidelines, especially for rural populations:

Guideline Developers

- Stroke guideline developers must review and revise the stroke guidelines provided to rural therapists in Bushbuckridge local municipality, Mpumalanga province. There could be a benefit in rural proofing clinical guidelines.
- The revised stroke clinical practice guidelines need to be scored on the iCAHE quality checklist and piloted before dissemination and implementation.
- A clear active strategy of guideline dissemination and implementation is required in order to improve the knowledge and uptake of these clinical guidelines.

- Guideline developers must arrange workshops with heads of therapy departments at the various hospitals or with therapists to educate on the purpose of clinical practice guidelines and on the difference between a clinical practice guideline and a clinical protocol.
- Stroke clinical practice guidelines for rural communities should be contextualized to the rural setting, taking into account the human and material resources that rural areas possess.
- Guidelines should also be easily accessible by therapists living in rural areas. The use of mobile technology should be incorporated into the guideline dissemination plan.
- Guideline developers must also consider developing guidelines that are not too long to read as this discourages therapists from reading them.

The following recommendations are provided to physiotherapy, occupational therapy, speech therapy and audiology heads of department as well as directors and deputy directors of rehabilitation.

Heads of therapy departments/rehabilitation directors

- Therapists reported that they lack the time to read and review stroke clinical practice guidelines. In order to address this and improve the uptake of clinical practice guidelines at the various hospitals, it is recommended that heads of therapy departments should encourage departmental discussions and audits of clinical practice guidelines quarterly or bi-annually.
- Heads of department should discuss clinical practice guidelines during national rehabilitation forums so that they can share ideas with other provincial therapy departments.

5.3 CONTRIBUTIONS OF THIS STUDY

- This study provides rich data and adds to the paucity of literature in the field of stroke clinical guidelines, especially in rural contexts.
- This study suggests that clinical practice guidelines should be proofed for rural setting.
- This study provides a reference point for future studies in a similar field.

5.4 FUTURE STUDIES

- Research following this study should look into expanding the study to all the districts in Mpumalanga province to get a bigger picture of what is happening in other districts.
- Future studies should also look at exploring strategies for guideline implementation in other rural municipalities.

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ANNEXURE 1

- **FINAL INTERVIEW GUIDE**

Exploring the perceptions and assessing the quality of stroke clinical practice guidelines amongst allied rehabilitation practitioners based in rural primary care hospitals in the Bushbuckridge local municipality.

Study Overall Aim:

To explore the perceptions and assess the quality of stroke clinical practice guidelines amongst allied rehabilitation practitioners based in rural primary care hospitals in the Bushbuckridge local municipality and evaluate if there is a gap between policy and practice.

Objectives

1. To explore the knowledge and attitudes related to stroke clinical practice guidelines among allied rehabilitation practitioners based in rural primary care hospitals in the Bushbuckridge local municipality.

2. To explore the practices related to stroke clinical practice guidelines among allied rehabilitation practitioners based in rural primary care hospitals in the Bushbuckridge local municipality.

3. To assess the quality of stroke clinical practice guidelines used by allied rehabilitation practitioners based in rural primary care hospitals in the Bushbuckridge local municipality.

QUESTIONNAIRE

1. Tell me about your position and experience at this hospital (including duration of employment)
2. What is your approach to the management of stroke patients? (what guides your decision making)
3. What are your views on clinical evidence based practice?
4. What do you know about clinical guidelines?
5. Do you know of guidelines for stroke patients?
6. If yes to 5, how do you know about them? (how do you receive them)
7. When did you hear about these stroke guidelines?

8. What do you think about these guidelines?
9. Do you use these stroke guidelines?
10. If yes to 9, do you think they have improved the quality of your patient care?
11. Do you find it easy to use these guidelines? How so?
12. What do you think about the evidence used to compile these guidelines?
13. Do you think these guidelines serve its purposes?
14. If no to 9, why don't you use them? What do you use to make clinical decisions for stroke patient care?
15. What could improve your use of guidelines?
16. Do you think evidence based practice improves patient care? Why/why not?
17. What do you think about the quality of these guidelines?
18. How would you (in your own words) define a good quality guideline?
19. How do you think the hospital you work at (mention name) could improve the implementation/use of stroke guidelines?
20. What recommendations would you give to people who develop these guidelines?

BLUE = QUESTIONS FOR EVERY PARTICIPANT.

RED = FOR PARTICIPANTS WHO KNOW ABOUT GUIDELINES.

GREEN = PARTICIPANTS WHO USE GUIDELINES.

BLACK = PARTICIPANTS WHO DO NOT USE GUIDELINES.

ANNEXURE 2

- **FINAL iCAHE GUIDELINE CHECKLIST**

Participant Number: _____

	Yes (1)	**No (0)**
1. Is the guideline readily available in full text?		
2. Does the guideline provide a complete reference list?		
3. Does the guideline provide a summary of its recommendations?		
4. Is there a date of completion available?		
5. Does the guideline provide an anticipated review date?		
6. Does the guideline provide dates for when literature was included?		
7. Does the guideline provide an outline of the strategy they used to find underlying evidence?		
8. Does the guideline use a hierarchy to rank the quality of the underlying evidence?		
9. Does the guideline appraise the quality of the evidence which underpins its recommendations?		
10. Does the guideline link the hierarchy and quality of underlying evidence to each recommendation?		
11. Are the developers of the guideline clearly stated?		
12. Does the qualifications and expertise of the guideline developer(s) link with the purpose of the guideline and its end users?		
13. Are the purpose and target users of the guideline stated?		
14. Is the guideline readable and easy to navigate?		
TOTAL SCORING OBTAINED		**/**14
PERCENTAGE SCORE: Formula: $\frac{\text{Participant score}}{\text{Total possible score}} \times 100$.	$\frac{___}{14} \times 100$	

ANNEXURE 3

- **INFORMATION SHEET**



Enq: Sekome K

078 011 8605 / 071 876 7723

Dear Therapist

I am a Master of Public Health student at the University of the Witwatersrand. To fulfil the requirements for a masters' degree I am asked to undertake a research component. The research topic is as follows: "*Exploring the perceptions and assessing the quality of stroke clinical practice guidelines amongst allied rehabilitation practitioners at rural primary care hospitals in Bushbuckridge local municipality*."

The purpose of this correspondence is to invite you to participate in this research study.

What is the aim of this study?

The aim of this study is to explore the perceptions and assess the quality of stroke clinical practice guidelines amongst allied rehabilitation practitioners at rural primary care hospitals in Bushbuckridge local municipality and evaluate if there is a gap between policy and practice.

What does the study involve?

You will be required to undergo a one-on-one in depth interview with the researcher where you will be asked a series of questions related to the topic. The interview will last between 45 minutes to one hour. Following the interview you will be provided with a checklist where you will be required to respond with either "Yes" or "No" to a set of 14 questions about the quality of stroke guidelines. This will take approximately five minutes.

Where and when will the study be conducted?

The study will be conducted during the month of November 2015 at the hospital where you are currently employed. A suitable room that is quiet and confidential will be used at your hospital., The study will be conducted during the week and times will be confirmed in advance.

Confidentiality

To ensure confidentiality, your name will not be used to identify you as it will be substituted with a pre-identified number. These numbers will be categorised according to the different professional codes i.e. (1 = Physiotherapy, 2 = Occupational Therapy, 3 = Speech Therapy and Audiology). A letter will be further allocated to each participant under their occupation (a, b, c, d, etc). This means that the first participant from Physiotherapy to be interviewed will be identified as 1(a), the second 1(b), etc. All signed informed consent forms will be kept in a locked drawer where only the researcher can access them. These will be destroyed within two years of the study publication.

Costs

You will incur no costs by participating in this research study.

Can I withdraw from the study?

Your participation in this study is entirely voluntary and therefore you may withdraw at any time. However, your participation in the study will be highly appreciated as it will aid the researcher to understand the perceptions and assess the quality of clinical practice guidelines in order to make recommendations to improve the quality of patient care.

If you are unhappy about anything that takes place or would like more information please do not hesitate to contact the research supervisor. Alternatively, you can contact the chairperson of the Human Research Ethics Committee (medical) at the University of the Witwatersrand.

Researcher

Sekome Kganetso
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Cell: 078 011 8605 / 071 8767723

Supervisor

Nontsikelelo Mapukata-Sondzaba

Email: Ntsiki.Mapukata-Sondzaba@wits.ac.za

Cell: 082 414 8766 / 011 717 2091

Human Research Ethics Committee Chairperson

Professor Peter Cleaton-Jones

Email: Peter.Cleaton-Jones@wits.ac.za

Tel: 011 717 2229

I hereby confirm that I have read and understood all the details associated with the research and I am willing to be a participant in the study.

Signature : _____

Date : _____

ANNEXURE 4

- **PARTICIPANT INFORMED CONSENT**

Enq: Sekome K

078 011 8605 / 071 876 7723

I _____ have been informed about the study titled: "*Exploring the perceptions and assessing the quality of stroke clinical practice guidelines amongst allied rehabilitation practitioners at rural primary care hospitals in Bushbuckridge local municipality*."

I understand the purpose of the study. I have been given an opportunity to ask questions about the study and have had answers to my satisfaction. I declare that my participation in this study is voluntary and that I may withdraw at any time.

If I have any further questions or concerns regarding this study I may contact:

Researcher
Sekome Kganetso
Email: kgakzin88@gmail.com
Cell: 078 011 8605 / 071 8767723

Supervisor
Nontsikelelo Mapukata-Sondzaba
Email: Ntsiki.Mapukata-Sondzaba@wits.ac.za
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Human Research Ethics Committee Chairperson
Professor Peter Cleaton-Jones
Email: Peter.Cleaton-Jones@wits.ac.za
Tel: 011 717 2229

I hereby confirm that I have read and understood all the details associated with the research and I am willing to be a participant in the study.

Signature : _____
Date : _____

ANNEXURE 5

- **PARTICIPANT INFORMED CONSENT FOR AUDIO RECORDING AND TRANSCRIPTION**



Enq: Sekome K

078 011 8605 / 071 876 7723

"*Exploring the perceptions and assessing the quality of stroke clinical practice guidelines amongst allied rehabilitation practitioners at rural primary care hospitals in Bushbuckridge local municipality*."

Dear Sir/Madam

The research study mentioned above involves the audio recording of your interview by the researcher. Neither your name nor any other identifying information will be associated with the audio or audio recording or the transcript. Only the researcher and the transcriber will be able to listen to the recordings.

The tapes will be transcribed by an independent person who will be contracted during the research period and will be erased once transcriptions are checked for accuracy. By signing this form, you agree to the following:

1) The researcher can audio record me in an interview as part of his research.
2) I understand that the audio recordings will be transcribed by an independent person employed by the researcher.
3) I know that the researcher will present his findings and publish the results of this research and that my name will not be used in any of these.
4) Audio recording during interviews is voluntary and I may request the researcher to stop recording during the interview or to erase a portion of the recording.

Name of Participant

_____Signature_____

Date _____ Witness _____

ANNEXURE 6

- **DEDUCTIVE CODES**

Codebook

Code: Tags or labels for assigning units of meaning to the descriptive or inferential information compiled during a study.

Codebook: a set of codes, definitions, and examples used as a guide to help analyze interview data. The structure of codebook should consist of **SIX** components:

1. Code name/label
2. Brief definition
3. Full definition
4. Inclusion criteria
5. Exclusion criteria
6. Examples

Deductive codes: based on the study objectives and available literature

THEORY DRIVEN CODES

Objective 1: To explore the **knowledge** and **attitudes** related to stroke clinical practice guidelines among allied rehabilitation practitioners based in rural primary care hospitals in the Bushbuckridge local municipality.

Knowledge

Code	Description
Aware of existence	The extent to which therapists know what a clinical guideline is. .
Non familiarity	Therapists not being familiar with what a guideline is.

Attitudes

Code	Description
Non flexibility	Stroke patients that are seen by therapists often have other conditions (co-morbidities) and guidelines are not flexible enough to accommodate this.
Non-contextualization/non-relevance	The extent to which guidelines are not contextualized to the rural nature of hospitals.

Objective 2: To explore the **practices** related to the use of stroke clinical practice guidelines among allied rehabilitation practitioners based in rural primary care hospitals in the Bushbuckridge local municipality.

PRACTICES

Code	Description
Lack of time	Therapists have insufficient time in their daily work routine to read the guidelines. Limited treatment session with patients does not make it practical to apply guidelines in most instances.
Length challenges	The length of the guideline affects whether or not the therapists will read or practice it.
Lack of Supervision	The extent to which there is no follow-up to see whether the therapists use these guidelines.
Mixed approach	The extent to which therapists manage stroke patients by involving various approaches.
Clinical experience utilization	The extent to which Therapists prefer to use their own clinical experience to manage stroke patients
University training utilization	The extent to which Therapists prefer to use the training from university to manage stroke patients
Peer consultation preference	The extent to which Therapists prefer to consult with their peers/colleagues in managing stroke patients

ANNEXURE 7

- **PHYSIOTHERAPY CLINICAL GUIDELINES**

CEREBRAL VASCULAR ACCIDENT

ACUTE CEREBRAL VASCULAR ACCIDENT: (PRIMARILY INPATIENTS)

Purpose:

- To restore an acceptable quality of life to a patient who have suffered a cerebral vascular accident (CVA) following a thorough assessment and treatment program
- To maintain a holistic treatment program for patients with CVA.

Objective:

- To prevent complications (Post stroke shoulder pain; lung complications; contractures; circulatory problems).
- To maintain and improve function.
- Educate the patient and the family regarding the condition.

Procedure:

Prevention of:

Circulatory problems (DVT, pressure sores):

- Education of the patient and the family regarding the condition.
- Pressure care, regular position change
- Passive or active assisted movements (movements should be slow, with large ROM and a bilateral approach.)
- It has been found that intra-cranial pressure is highly dependent on posture, being higher in patients who are nursed flat and lower when sitting up. If intra-cranial pressure is lower in sitting, this can lead to increased cerebral perfusion, which is beneficial to the patient.

Lung complications:

- Immobility and altered tone can lead to poor chest expansion and a depressed cough reflex. It is therefore important to ensure that the patient maintains a clear airway, especially if confused or unconscious with a resulting increased risk of aspiration.
- People with poor swallowing reflex have an increased risk of aspiration if they are nursed in supine. All these can lead to atelectasis or aspiration pneumonia.

- It has been found that blood oxygen saturation is significantly higher in stroke patients who are sat up than those nursed lying down. It is therefore important that the patient be sat up as soon as possible. This would increase the functional residual capacity and decrease the risk to develop atelactasis.
- Early mobilization, in and out of bed.
- Regular position change
- Suctioning if necessary
- Neurogenic facilitation of respiration (manual pressure, peri-oral stimulation, vertebral pressure, intercostal stretch.

Post-stroke-shoulder-pain:

- Normalizing tone using trunk rotations, gentle limb stretches.
- Early weight-bearing especially on the affected side.
- Positioning (side-lying is very good as the tonic labyrinthine reflex is inhibited). Weight bearing through the affected glenohumeral joint will help normalize tone.
- Re-education of the shoulder stabilizers (rotator cuff) and soon as possible to prevent subluxation. Strapping to be done for shoulder subluxation.
- Education of nurses and family, especially not to pull on hemi arm.

Contractures:

- Normalize tone (rotations, gentle limb stretches in the reflex- inhibiting positions, weight-bearing exercises)
- Passive movements of the hemiplegic side. These help to remind the patient of the affected limb and what normal movement feels like. They should be used in combination with verbal feedback.
- Active movements should be encouraged for the unaffected side.
- Mobility assessment to evaluate the need for an assistive device. An appropriate assistive device should be issued to improve function.

Maintaining function:

- Stimulation of the affected side (sensory and functional stimulation)
- Correct positioning
- Room layout (the hemi-side must never face the wall, the bed should be positioned so that people approach the patient from the hemi-side.)
- Maintain and improve bed function (bridging, rolling, rolling to sitting)
- General stimulation to improve morale.
- Re-education of normal movement patterns, avoiding the use of mass patterns.

Family education

- Stroke and risk factors.
- How to position patient and why.
- How to get the patient to assist them with bed mobility and ADL.
- How to transfer the patient.
- How to mobilize the patient.

Nurse Education (Positioning, not to pull on hemi arm, nurses should encourage any independent function that the patient has during ward duties like bed washing, eating etc, and all staff should approach patient from the hemi-side.)

Family/Friends/Nurses should be encouraged to:

- Approach and feed the patient from the affected side.
- Handle the affected shoulder carefully.
- Sit on the affected side when visiting.
- Put the locker on the affected side.
- Encourage weight bearing through the affected side.
- Encourage movement across the midline.
- Rub or tape the patient's affected arm.
- Give verbal reassurance and feedback.

Precautions:

- Never pull the patient with the hemiplegic arm.
- High Blood Pressure: consult the doctor before commencing treatment
- Unstable BP
- Never overstretch hypotonic muscles.
- Postural Hypotension: especially when coming from lying into sitting for the first time.

CHRONIC CVA: (INCLUDES OUTPATIENTS AND COMMUNITY)

Objectives:

Assessment

- The emphasis is on the patient's functional needs. i.e.
  - Mobility independency / functional level
  - Functional level in activities of daily living.
  - Muscle tone and spasticity
  - Begin at the patient's highest functional level.

- Maximize functional independence.
- Prevent development of complications

Procedure:

- Multi-disciplinary approach! Referral to other stakeholders if they are not involved.
- Normalizing tone:
  - Tone-increasing techniques:
    - Static weight bearing activities
    - Passive stretch (rhythmic inhibitory pattern)
    - Work in reflex-inhibiting pattern
  - Tone decreasing techniques:
    - Rotations
    - Dynamic Weight Bearing activities
    - Bilateral and symmetrical approach.
    - Work towards reflex-inhibiting pattern.
- Analyse

  The functional problems and improve the components to improve function i.e. facilitate these functions (i.e. sitting to standing, walking, stairs, getting up from floor) using Bobath techniques.

- Encourage independence (toilet, eating, dressing etc through education of the patient and family).

Aims with Inpatients:

- Maintain function, joint ROM etc.
- Work towards independent function, i.e.
  - Bed mobility
  - Eating
  - Sitting
  - Transfers
  - Toilet use through bridging, if bedridden.
- Education of the patient, staff and the family.

Aims with Outpatients and Community:

- Treatment will focus on what the **patient** feels is his/her main problem.
- Work towards achieving the patient's highest independent function.
- Providing the patient with a suitable home exercise program according to his/her needs.

- Issue patient with an assistive device to maximize independence.
- Education.

Precautions:

- Do not overstretch flaccid muscles.
- Caution when there is sensory fallout.

ANNEXURE 8

- **OCCUPATIONAL THERAPY CLINICAL GUIDELINES**

CEREBROVASCULAR ACCIDENT

Objectives

- To provide standardised Occupational Therapy services for patients who had Cerebrovascular Accidents (CVA).
- To assist patients who had CVA's in achieving the maximal functioning level of independence.
- To educate patients and their families regarding ongoing treatment and ensure consistent home management of patients on discharge.
- To assist patients and their families in adjusting to the disability and life changes.

Community level

- Identify patients through home visits and from CBR consultant referrals.
- Referral to CVA support group if it exists.
- Basic functional assessment of the patient to identify functional problems due to the disability.
- Family education on pathology / condition.
- Educate family on back saving principles, specifically in relation to doing transfers.
- Family support and education on supporting the CVA patient e.g. diet, medication, manual handling, adequate positioning, mobility and daily ADL.
- Assess patient for assistive devices and determine whether patient will be willing to
- use it. Only issue assistive devices to those patients who are motivated to use it.
- Refer to hospital for medical intervention, if necessary.
- Refer to Rehabilitation Outreach Clinic for follow-up.

Clinic level

- Identify patients through screening, referral from nursing personnel and CBR consultants.
- Take a short history of the condition and the problems experienced.
- Basic functional assessment of the patient including bed mobility, transfers, toileting, feeding, grooming, dressing and personal hygiene.
- Intervention:

- Educate family member staying with patient and patient himself, regarding understanding and insight into condition.
- Home programme for correct positioning techniques, and management of daily self-care and remedial activities.
- Follow up of higher-level patients with regards to return to work setting, reasonable accommodation and work hardening.

- Educate family on back saving principles, specifically in relation to doing transfers.
- Assess patient for assistive devices and determine whether patient will be willing to use it.
- Issue assistive devices and give training on the use thereof. Only issue to those patients motivated to use it.
- Refer to hospital for medical intervention, if necessary.
- Refer to hospital for specialized rehabilitation intervention i.e. splinting, if necessary etc.

Hospital Level

Screening and assessment

- The priority of the assessment procedures should be determined by each individual patient's needs.
- A full assessment follows as soon as possible after the doctor's first medical examination of the patient.
- Before the OT interviews the patient / family, she should consult the patient's file for results and special evaluations.
- The OT must always be aware of the patient's blood pressure and pulse rate before intervention proceeds.
- Other important information may be obtained from the nursing personnel, doctor and physiotherapist so that treatment can be planned and developed according to the specific needs of the patient.

The following is assessed:

- Social history: family relationships, roles, lifestyle, work, carers and support network.
- Past medical history: Other medical conditions e.g. heart conditions or orthopaedic problems.
- Environmental considerations: Accommodation, layout and adaptations.
- Functional ability: Personal ADL, domestic ADL, bed mobility, transfers, functional mobility, toileting, feeding, dressing, and personal hygiene.
- Physical sensory difficulties: Tonal problems, hemiplegia, pain and sensory problems.

- Cognitive problems: Short term memory problems, concentration, attention, planning, initiation and termination of tasks.
- Perceptual difficulties: Body image, dyspraxia, agnosia and unilateral neglect.
- Communication: dysartria, expressive/ receptive aphasia.
- Psychological: feelings about themselves and others, mood, liability and adjustment to disability.
- Motivation/attitude.

Treatment

- Patient/family education with regards to causes of stroke, possible medical investigations to expect, medical prevention of stroke, general problems that arise post stroke, lifestyle changes to prevent secondary strokes, short-term and long-term goals.
- Correct positioning for the acute hemiplegic patient with regards to bed and chair. Positioning posters can be placed above patient's bed to involve family and nursing personnel.
- Management of motor/ sensory deficits:
  Incorporate normal movement, balance retraining and wheelchair dexterity management (if applicable) into
  - Self-care activities e.g. washing, bathing, dressing and feeding
  - Instrumental activities e.g. kitchen, cleaning/laundry and household
  - Remedial activities e.g. board games, sport sessions as well as arts and crafts.
- Management of cognitive/ perceptual problems
  - Cognitive: Attention, memory, reasoning, initiation and termination of tasks, planning.
  - Perceptual: Body image, Spatial relations, agnosia
- Addressing psychological issues with regards to mood, depression, anxiety, liability and sexual activity.
- Preparing higher level patients for return to work by work visits where necessary, reasonable adaptations are made and work- hardening done.
- Assess patient for assistive devices and determine whether patient will be willing to use it. Only issue to those patients who are motivated to use them.
- Issue of assistive devices and training on the use thereof.
- Referral to dietician for education on healthy eating habits.
- Referral to speech therapist for communication difficulties.

The main principles of intervention include the following:

- The patient is encouraged to involve the affected side in activities by facilitation.

- Associated reactions are avoided through reducing the effort required to move.
- The environment is structured to promote the patient's even weight bearing, normal posture and balance.
- The therapist, to promote normal movement sequences, facilitates normal activities of daily living.
- Early adaptations of the tasks, to enable independence, should not encourage patients to adopt abnormal postures.
- Tasks may be presented in ways that will challenge the patient's balance reactions and encourage problem-solving to movement problems.
- Teach patient visual and cognitive compensation to increase function where permanent loss occurs. (14 – 24 months after CVA)

On discharge:

- The patient should receive a follow-up appointment on discharge. The patient could be followed up at community-, clinic- and/or hospital level.
- A home programme should be given to maintain ROM, facilitate independence etc.
- Educate family on back saving principles, specifically in relation to doing transfers.

ANNEXURE 9

- **SPEECH THERAPY/AUDIOLOGY CLINICAL GUIDELINES**

Document: Mpumalanga Speech Therapy/Audiology Treatment Protocol	**Date:** 31 March 2006
Protocol: Adult Neurology	**Review Date**: March 2008
Controlling Officer:	**Signature:**
Approving Officer: M Wolmarans DD: Rehabilitation & Disability Services	**Signature:**

Purpose:

1. To identify, assess and treat individuals with acquired neurological conditions specific to speech, language and cognitive disorders.
2. To provide an appropriate and comprehensive service at community, clinic and hospital levels of care.

Procedure:

A) Community:

1. The therapist must educate/train Community Based Rehabilitation Workers (CBRW's) and Home Based Care Workers (HBCW's) about the disorders and the role of the speech language pathologist and audiologist in the management of the disorders.
2. Facilitate the CBRW's in identifying adults with acquired neurological conditions.
3. Provide the CBRW's with relevant dates and details of group meetings, in order for them to make appropriate referrals.
4. Each individual referred for management is required to present an accompanying referral letter from the CBRW.
5. Home visits must be carried out if deemed necessary, as the patient may be immobile and unable to attend the meetings.
6. Assessment and management must take place in groups at a community level.
7. At this level, appropriate referrals must be made to other institutions and sectors if necessary.
8. The therapist must document all outcomes in the group records.

B) Clinic:

1. The therapist needs to educate and train clinic staff about the disorders and the role of the speech language pathologist and audiologist in the management of the disorders.
2. Notify patients of the service available at the clinics, using a translator if possible.
3. The therapist must identify other individuals in the clinic presenting with acquired neurological conditions, through an informal screening procedure.
4. Individual and/or group assessment and treatment must be done at a clinic level, preferably in a multidisciplinary team.
5. The following conditions may be present in patients with acquired neurological conditions: Aphasia, Apraxia, Dysarthria, Dysphagia, Dementia, Right hemisphere Disorder, Central Processing Disorder and Cognitive Disorder.
6. These conditions may require treatment on an individual basis.
7. A functional communicative approach to intervention must be taken, particularly at a community and clinic level of service.
8. Individuals can attend individual therapy at the clinics and be referred to group sessions at a community level as well.
9. Follow up appointments must be discussed and scheduled accordingly.
10. Monitoring of progress must be documented in the patient's clinic file.
11. Termination of therapy must be discussed with the patient according to the discharge policy.

C) Hospital:

1. Referrals are received from the hospital outpatients department, wards, clinics and the community.
2. Individual assessment and treatment, possibly at special clinics, takes place within the hospital.,
3. Hospital intervention must also take place as a multidisciplinary team as far as possible.
4. Individuals must also be assessed for Free Health Care Services and the speech language therapist and audiologist must provide input for the application of disability grants.
5. The therapist must make referrals to other specialised services as necessary.
6. All intervention must be documented in the patient's hospital file.
7. Follow up appointments must be discussed and scheduled accordingly.
8. Monitoring of progress must be documented in the patient's clinic file.

9. Termination of therapy must be discussed with the patient according to the discharge policy.

Note: Adult neurology patients could be candidates for Assistive Devices, and must be referred appropriately at all levels of care.

ANNEXURE 10

- **ETHICAL CLEARANCE CERTIFICATE: UNIVERSITY OF THE WITWATERSRAND**

R14/49 Mr Sekome Kganetso

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)

CLEARANCE CERTIFICATE NO. M151180

NAME: (Principal Investigator)	Mr Sekome Kganetso
DEPARTMENT:	School of Public Health Tintswalo, Matikwana and Mapulaneng Hospitals
PROJECT TITLE:	Exploring the Perceptions and Assessing the Quality of Stroke Clinical Practice Guidelines Amongst Allied Rehabilitation Practitioners Based in Rural Primary Care Hospitals in the Bushbuckridge Local Manucipality
DATE CONSIDERED:	27/11/2015
DECISION:	Approved unconditionally
CONDITIONS:	
SUPERVISOR:	Nontsikelelo Mapukata-Sondzaba
APPROVED BY:	Professor P Cleaton-Jones,Chairperson, HREC (Medical)
DATE OF APPROVAL:	27/01/2016

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 in Room 10004, 10th floor, Senate House/2nd Floor, Phillip Tobias Building, Parktown, University of the Witwatersrand. I/we fully understand the conditions under which I am/we are authorized to carry out the above-mentioned research and I/we undertake to ensure compliance with these conditions. Should any departure be contemplated, from the research protocol as approved, I/we undertake to resubmit the application to the Committee. **I agree to submit a yearly progress report**.

Principal Investigator Signature Date

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES

ANNEXURE 11

- **ETHICAL CLEARANCE CERTIFICATE: MPUMALANGA**

health
MPUMALANGA PROVINCE
REPUBLIC OF SOUTH AFRICA

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Enquiries: Themba Mulungo (013) 766 3511

18 January 2016

Mr K Sekome
Wits Education Campus
7 York Road
PARKTOWN
2193

Dear Mr. Kganetso Sekome

APPLICATION FOR RESEARCH & ETHICS APPROVAL: EXPLORING THE PERCEPTIONS AND ASSESSING THE QUALITY OF STROKE CLINICAL PRACTICE GUIDELINES AMONGST ALLIED REHABILITATION PRACTITIONERS BASED IN RURAL PRIMARY CARE HOSPITALS IN THE BUSHBUCKRIDGE LOCAL MUNICIPALITY

The Provincial Health Research and Ethics Committee has approved your research proposal in the latest format that you sent.

PHREC REF: MP_2015RP23_328

Kindly ensure that you provide us with the soft and hard copies of the report once your research project has been completed.

MPUMALANGA PROVINCE
DEPARTMENT OF HEALTH
PLANNING & INFORMATION
2016 -01- 18
PRIVATE BAG X 11285
NELSPRUIT 1200

Kind regards

MR. JERRY SIGUDLA
RESEARCH AND EPIDEMIOLOGY

MPUMALANGA
THE PLACE OF THE RISING SUN

ANNEXURE 12

PERMISSION LETTER TO STUDY SITES

Enq: Sekome K
20 January 2016

TO: THE HOSPITAL MANAGER/CHIEF EXECUTIVE OFFICER

REQUEST FOR PERMISSION TO CONDUCT RESEARCH WITH ALLIED REHABILITATION PRACTITIONERS AT TINTSWALO HOSPITAL.

Dear Sir/Madam
I am a Master of Public Health student at the University of the Witwatersrand. To fulfil the requirements for a Masters degree I am asked to undertake a research component. My research topic is as follows:
"*Exploring the perceptions and assessing the quality of stroke clinical practice guidelines amongst allied rehabilitation practitioners at rural primary care hospitals in Bushbuckridge local municipality*."

Permission to conduct this research has been granted and approved by the Mpumalanga department of health ethics committee; the letter of approval is attached. In writing this letter I wish to request permission so I may conduct research with allied rehabilitation practitioners working in your facility at Tintswalo hospital.

What is the aim of this study?
The aim of this study is to explore the perceptions and assess the quality of stroke clinical practice guidelines amongst allied rehabilitation practitioners at rural primary care hospitals in Bushbuckridge local municipality.

Study population
The study will involve Physiotherapists, Occupational therapists, Speech therapists and Audiologists employed at Tintswalo hospital, Matikwana hospital, and Mapulaneng hospital.
What does the study involve?
The study participants will be required to undergo a one-on-one in depth interview with the researcher where they will be asked a series of questions related to the topic. Each interview will last between 30 to 40 minutes. The interviews will be audio recorded and transcribed. Following the interview the study participants will be provided with a checklist where they will be required to respond with either "Yes" or "No" to a set of 14 questions about the quality of stroke guidelines used at their facility. This will take approximately five minutes.

Where and when will the study be conducted?
The study will be conducted during the month of March 2016 at the three study sites. A suitable room that is quiet and confidential will be used at the hospital. The study will be conducted during the week and times will be confirmed in advance.

Confidentiality
To ensure confidentiality, study participants will not be identified by name. Informed consent will be sought from study participants explaining that participation is voluntary. Informed consent will also be sought from participants to be audio recorded during interviews. All signed informed consent forms will be kept in a locked drawer where only the researcher can access them. These will be destroyed within two years of study publication.

Costs
No costs will be incurred by the study participants or by Tintswalo hospital by allowing this research to be conducted.

Any other queries related to the study may be directed to the Chairperson of the Human Resources Ethics Committee (HREC) at University of Witwatersrand.
Your response will be greatly appreciated.

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Human Research Ethics Committee Chairperson
Professor Peter Cleaton-Jones
Email: Peter.Cleaton-Jones@wits.ac.za
Tel: 011 717 2229

APPROVED/NOT APPROVED

COMMENTS:_____

_____

_____

_____

Signature: _____ Date: _____