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School Of Public Health

FACTORS INFLUENCING THE QUALITY OF LIFE OF PATIENTS WITH DISABILLITY POST STROKE IN MOPANI DISTRICT, LIMPOPO PROVINCE

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A research report submitted to the school of Public Health, Faculty of Health Sciences, University of the Witwatersrand, Johannesburg, in partial fulfilment of the requirements for the degree of Master of Public Health in the field of Rural Health.

Johannesburg South Africa, August 2018

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DECLARATION

I Mmabatho Langa declare that this research report is sorely my effort and that any borrowed ideas are properly referenced and acknowledged. This work has not been submitted to any institution for examination. This work is submitted to the School of Public Health at the University of Witwatersrand as a partial fulfilment for the Master of Public Health (Rural Health). The approval of this study was obtained from the Human Research Ethics Committee, Ethics Clearance Certificate Number: M160556.

_____

Signed

_____day of_____20_____in_____

DEDICATION

I dedicate this work to all the stroke survivors and everyone else that is living with or taking care of a stroke survivor.

ABSTRACT

Background: Recent studies suggest that many people are faced with long term disability as a result of the increase in the incidence of stroke in South Africa. Currently there is no knowledge on the factors that influence the quality of life of stroke patients in Mopani District. As a result, it is difficult to plan rehabilitation for the patients. This study aims to determine the factors influencing the quality of life of patients with disability post stroke in Mopani District, Limpopo.

Methods: A quantitative, descriptive cross-sectional research design was used. A total of 231 participants out of a sample size of 341 was purposefully selected from five public hospitals in Mopani district and took part in the study. This resulted in a response rate of 68%. Data were collected using a questionnaire and the Stroke Specific Quality of Life Scale (SSQOL). Data were analysed using STATA version 13 and open- ended questions were analysed quantitatively using summative content analysis.

Results: The majority of the participants were black, female, single and had completed secondary school education. Most of the participants reported to have good quality of life (66%). Thirty five percent of the participants however expressed that they were more dependent on their caregivers as well as their need to be more self-reliant. Age, marital status and source of livelihood had a highly significant relationship with QOL (P-value of 0.001, 0.003 and 0.008 respectively). The domains which participants scored poorly were work, upper extremity function, social and family roles. Participants with poor quality of life had the following scores: work (33%), social (32%), upper limb function (44%) and family roles (40%). Participants with good quality of life scored: work (60%), upper extremity function (64%), social (60%) and family roles (67%).

Conclusion: The study findings indicate that rehabilitation should focus on acquiring optimal physical ability as well as obtaining social integration. The research has identified challenges that can lead to dissatisfaction with quality of life amongst stroke survivors who are independent in daily activities.

Keywords: Stroke, Quality of life, activities of daily living, caregiver, rehabilitation, rural.

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ACRONYMS

ADL	Activities Of Daily Living
AIDS	Acquired immune deficiency syndrome
DM	Diabetes mellitus
DOH	Department of Health
HBC	Home Based Care
HIV	Human immune deficiency virus
HPT	Hypertension
HREC	Human Research Ethics Committee
QOL	Quality of life
ROM	Range of Movement
SSQOL	Stroke Specific Quality of Life
TB	Tuberculosis
PPS	Post Stroke Spasticity

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DEFINITION OF TERMS

1. Quality of life: “Quality of life is defined as individual’s perceptions of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns” (1)

2. Stroke: A condition which presents with sudden neurological disturbance, it can be a disturbance in balance, vision or numbness or weakness of the limbs (2).

3. Caregivers: “Individuals who are taking care of the stroke patients. These are informal caregivers, they are regarded as informal because they are not getting paid or trained on how to take care of a stroke patient. They can be the patients family or close friends” (3).

4. Rehabilitation: “a set of measures that assist individuals who experience, or are likely to experience, disability to achieve and maintain optimal functioning in interaction with their environments” (4).

CHAPTER 1: INTRODUCTION

1.0 Introduction

This chapter focuses on providing background information on the topic under investigation. A literature review showing core concepts around epidemiology of stroke, the impact of stroke and the rehabilitation process are introduced and explored. This chapter also outlines the statement of the problem, research question, aim, objectives and justifies the necessity of this research.

1.1 Background

Stroke is one of the most common causes of death globally, followed by ischaemic heart disease (1). Globally there was a reported increase in the burden of stroke between 1990 and 2010, the increase in the incidence of stroke in low income countries and middle income countries was 37% and 47% respectively and the increase in deaths was 21% and 20% respectively (2). It is estimated that if this trend continues, by 2030 there will be 20 million deaths and 70 million stroke survivors worldwide (3). A systemic review which was conducted on the prevalence of stroke in Africa also reported that the burden of stroke in Africa is increasing; in 2009 there were an estimated 483 000 new stroke cases and 535 000 new stroke cases in 2013. This suggests that there was a 10,8% increase in stroke incidence between 2009 and 2013 (4).

Similar to the global data reported on above, stroke is reported to be amongst the most common causes of death in South Africa and is reported to be the third cause of death following HIV and ischaemic heart disease (5). It is estimated that about 30 000 cases of stroke occur yearly in rural South Africa (6). A study conducted by Maredza on disease burden of stroke in a rural South African district in Mpumalanga found that the prevalence of stroke was on the rise with the age adjusted rate of 349 per 100,000 person years (3).

More than 80% of stroke burden occurs in lower and middle income countries, however there is not enough reliable data on the epidemiology of stroke in these areas (7). Having epidemiological data is important in describing the trends and in the development of appropriate cost effective prevention and treatment strategies (7). Most of the epidemiological studies on stroke which were conducted in Sub-

Saharan Africa focused more on the deaths due to stroke and on the risk factors of stroke (8). There appears to be limited studies evaluating the quality of life for patients post stroke, despite this being an important health issue (8).

About 50% of the people who had a stroke are left disabled and are likely to depend on others for assistance in their daily living activities (9). The type of disability after a stroke varies as it depends on the part of the brain that is affected. The most common types of physical impairments that may result from stroke are upper limb dysfunction and difficulty in walking (9). Despite the physical impairments stroke can also result in cognitive impairments, most commonly are attention, orientation, memory and thinking (10).

A recent South African study has shown that the three month mortality rate post stroke was 30% and 66,7% of this cohort were left disabled (5). This disability contribute to the financial burden on the health care system and on their families (5). Most of the stroke patients do not return to their jobs after a stroke (11), this may also cause a burden on the social welfare system as most of these people are more likely to depend on the disability grant. Unlike other conditions which cause disability, stroke has a sudden onset and often its survivors and their caregivers are not prepared to deal with the outcomes (12). The latter is supported by the findings that most of the patients who had a stroke are only able to walk after an average of three months with rehabilitation (13). This seems to suggest that when most of these patients are discharged from hospital they are still dependent on their caregivers or family for assistance with activities of daily living (13). Stroke can therefore, have an impact on the quality of life of the stroke patients. A study conducted in Nigeria found that the quality of life of patients after a stroke was decreased (12). After experiencing stroke, patients may have to live with the disability for a long time, causing a decrease in their quality of life (14). This put a major burden on the families of the affected individual as well as the community.

The majority of stroke survivors in South Africa are from low income and under resourced areas (15) and do not have sufficient access to rehabilitation (16). The lack of rehabilitation put the stroke survivors at the risk of deterioration in their health, therefore, rehabilitation of stroke patients is vital to prevent the patient's condition from deteriorating after being discharged from the hospital and it also assists in re-

attaining the ability to do activities of daily living (17). The goals of rehabilitation after a stroke is to ensure that patients have good quality of life, they are able to engage in activities of living and they are satisfied with their lives (18). In developing countries such as South Africa it is difficult to comply with the stroke guidelines because of the limited resources (19).

Because of the increase in the prevalence of stroke survivors in South Africa and the consequence that stroke can have on the individual's quality of life and their families it is important to explore the factors that influence the quality of life of stroke survivors in Mopani district. The researcher works as a physiotherapist in the district and noticed that there is an increase in stroke survivors in the district.

1.2 Statement of the problem

Currently there is no knowledge of the factors that influence the quality of life of stroke patients in Mopani District. This lack of a body of knowledge makes it difficult to plan rehabilitation for the patients. It is important that the patient's perceived needs are known, in order to assist in planning their rehabilitation. While there have been other studies done on the quality of life of stroke patients in other areas of South Africa (20), the results from these studies cannot be generalized to rural Limpopo due to certain contextual factors (21). Rural areas have certain challenges which make them unique as compared to urban areas such as the difficulty in accessing health services and limited resources.

The accessibility of rehabilitation services in rural areas may also differ from those in the urban areas. Finally, what the patients perceive as important in one district may not necessarily be the same in other districts. A patient in the rural area may for example experience difficulty accessing a toilet due to the distance to be travelled, while a patient in more affluent or urbanized area may not experience the same challenge. Therefore, understanding the factors that influence the quality of life of post stroke patients from rural areas is crucial in order to come up with interventions which are specific to their needs.

1.3 Justification

Currently there is no documentation of the level of the quality of life for stroke patients when they are discharged from the hospital in Mopani district. The factors that influence the quality of life of the patients in this district are also unknown.

Justifiable knowledge of these contextual factors will assist in the planning of rehabilitation interventions which are suitable for the patients. Knowing the factors that are associated with quality of life in a certain population is important in improving and ensuring optimal care for the stroke survivors within that population (22).

1.4 Research Question

What are the factors that influence the quality of life of patients with disability post stroke in Mopani District, Limpopo province?

1.5 Aims and Objectives

- The aim of the study is to determine factors that influence the quality of life of patients with disability post stroke in Mopani District, Limpopo province.

OBJECTIVES

- To describe the socio-demographic characteristics of patients with disability post stroke in Mopani District, Limpopo province.
- To determine the quality of life of patients with disability post stroke in Mopani District, Limpopo province.
- To determine the association between the socio- demographic factors and the quality of life in patients with disability post stroke in Mopani District, Limpopo province.
- To compare the mean scores of the different domains on the stroke specific quality of life scale.

1.6 Literature review

1.6.1 Epidemiology of stroke in South Africa.

The prevalence of stroke in rural South Africa was estimated to be around 300/100 000 people with ages ranging from 15 – 85 years (23). This suggests that stroke affects both the younger and older population. Clinicians have also reported on the increase in the number of young HIV positive stroke patients. However there is no accurate data regarding the impact of HIV on stroke in South Africa (24). A study on the prevalence of stroke in rural South Africa reported only 2% of the stroke survivors were HIV positive (23). Further studies have to be conducted in order to determine the relationship between Stroke and HIV.

The high rate of disability post stroke in South Africa may be due to the short length of stay in the health facilities. A study by Mudzi on post discharge functional improvement reported that the average length of stay in hospital to be six days and the average contact with a physiotherapist to be one day (13). These may result in poor function upon discharge. The high rate of disability may also be attributed to the limited rehabilitation facilities, the unwillingness of the stroke patients to go for rehabilitation in fear that if they get better they may have their disability grant revoked, difficulty with transportation to the health facilities as well as the long distance which have to be travelled from the patients home to the health facility (25).

1.6.2 The impact of stroke on the stroke survivor's quality of life.

The health-related quality of life is defined as "a manner in which an individual perceives their life and how they are affected by an illness, including personal satisfaction which is associated with the individual's social, emotional and physical wellbeing" (26). Quality of life is a multi-dimensional construct that consist of at least three key domains which are physical, mental and social (14). Having a stroke can have a negative effect on the patient's quality of life and it can affect the above-mentioned domains. To assess the quality of life of the stroke patients or the impact of the stroke on the individual there are different tests which can be done. Tests which are often used are questionnaires which are subjective and the patient can describe their perceived health status (14).

There are a lot of factors that could influence the quality of life of stroke patients including the severity of the stroke, the cause and the affected part of the brain (27). Personal factors may also influence quality of life these factors include the ability to communicate, the use of an assistive devices as well as the changes made to their home environments and the support provided by other organizations and their families (27). In a recent study which was done in South Africa the quality of life of patients post stroke was found to be decreased (15). Poor functional ability and urinary incontinence were reported to be the factors which attributed to this decrease in quality of life (15). On the contrary a study which was conducted in Nigeria found that stroke had moderate impact on the patient's quality of life. The severity of the stroke, the disability and depression were identified as the most important factors that determined the quality of life (12). A study conducted in Nigeria by Ababakor and Isezuo found that clinical depression and having a disability to be the common

determinants of a poor quality of life (17).

Amongst factors impacting on quality of life are the ability to return to work; a study which was conducted by Daniel found that the majority of stroke survivors who were working before the stroke were not able to return to work (28). Stroke survivors may not be able to return to work because of severe physical impairments (29). Nearly 17% of stroke patients have post stroke spasticity (PPS), it is a condition which causes an increase in the patient's muscle tone and normally causes pain and affects the normal position of the hand and arm causing difficulty with grasping, self-care and performance of other daily activities (30). Another barrier of returning to work are the employers willingness to accommodate the person with disability (29).

A study conducted in Nigeria found that the quality of life post stroke was similar in both males and females (22). Similar findings were found in a study by Fatoye which reported that the gender of the stroke patients had no influence on their quality of life (31). However, age was found to impact quality of life for stroke survivors. Younger stroke patients recovered better after their stroke and they were found to have a better quality of life as compared to the older stroke patients, due to the former being stronger and that they are able to learn new skills faster (13). The assessment of stroke survivor's quality of life post stroke is important in order to evaluate the impact of stroke on the individual (12). However, evaluating the available data on the stroke survivors' quality of life post stroke is difficult due to the use of non-standardized measurement tools, comparing patients whose extent of disability differs and comparing stroke survivors who have received different treatments. An example of the latter is comparing patients who have received rehabilitation to those who have not received rehabilitation (12).

1.6.3 Social impact of stroke

Social support is defined as " the information that one is loved and cared for, valued and esteemed and able to count on others or engage in society should the need arise" (11). Social in this case also means being able to engage in society. Having a good social support can have an influence on recovery of the patients and their quality of life. Literature suggests that stroke patients who have a good social support have better functional ability, less depression, better interaction with their families and community and a better quality of life (11).

Activities needed for re-integration into the community were also found to be a challenge, for example going to work and participating in social events (15). Similarly a study conducted in rural Kwa-Zulu Natal found that although there seem to be an improvement in other activities of daily living, stroke patients still reported to have difficulties in participating in social and cultural activities in their communities (5). This may be because the rural areas have poor roads making it difficult for stroke survivors to walk around the community and be part of the community events. Some stroke patients can return to work after their stroke but most of them do not. The severity of the stroke, the degree of cognitive impairment, age, educational background and the type of job before the stroke are all factors that can influence whether a stroke patient can return to work or not (11). Returning to work for a person with disability in a rural area may be difficult as they may not be able to return to manual labour it is therefore important to incorporate vocational training into rehabilitation in order to enhance the return to work of people with disability (32) .

After a stroke, patients and their families are faced with new challenges because they now have to deal with changes to their health and function that impact on their ability in performing daily activities and a decrease in their quality of life. The social impact of stroke includes a strain in family relationships, poor sexual life and the inability to participate in leisure activities and changes in the financial situation (33).

Another study conducted in the Western Cape province found that stroke survivors were involved in health risk behaviours such as smoking and drinking and being physically inactive (34). This behaviour can result in a recurrent stroke and it can also cause complications such as contractures and pressure sores leading to a decrease in the quality of life of the stroke patient (34). There is no data available on why stroke survivors engage in these risky behaviours, it may be a means of coping or not having enough knowledge on the risk factors. Further studies are necessary in order to understand these behaviours. The social participation after a stroke can also be affected by the person's environment, factors such as support from the family, the ability to utilize health and social services (27). Despite the increase in the prevalence of stroke, there is still no model for post-acute care of a stroke patient. Research has not focused much on the long term support of stroke survivors in the community as well as their caregivers (35).

1.6.4 Impact of stroke on caregivers

The high prevalence of stroke and disability globally result in many people who now have to take the role of a caregiver for stroke survivors. Caregivers can be friends or family members who offer physical or emotional support to the stroke patients. The time commitments among carers differ, some stay full time with the patient, others visit occasionally or give support telephonically. In some instances the responsibility of caring for the stroke patient are shared, while sometimes it is the responsibility of one person (36). A study conducted in rural Kwazulu-Natal has found that two thirds of people with stroke or their caregivers were not given any form of training or education on stroke management or the prevention of a second stroke before discharge from the hospital (5). The same study found that there was a lot of strain amongst the caregivers due to the high dependency of patients after discharge from the hospital, poor family support, the unavailability of a stroke rehabilitation facility and inadequate home-based care support and poverty (5). When caregivers do not have adequate training, they may take on more unnecessary strain when taking care of a stroke survivor. For instance, when lifting and transferring patients the wrong way they can injure their backs or they can take-on more tasks which a stroke survivor is capable of doing by themselves.

Another study conducted in Johannesburg found that patients were discharged from the hospital without receiving sufficient rehabilitation and relied on their caregivers for assistance with daily activities (37). As a result the dependency of the stroke survivors on the carers caused a strain to their caregivers (37). Many of the informal caregivers have stress because of having to take care of a disabled stroke patient and this put the caregiver at risk of also developing their own health problems. When the caregiver is not well they may not be able to adequately provide home care to the stroke patient and may negatively affect their recovery (38). Being a caregiver may also have a financial impact on the family as the carer may have to leave their jobs to take care of the stroke survivor (39).

Even though there has been research on the negative impact that stroke has on the quality of life of caregivers, there are limited strategies reported on the literature on how to reduce the burden off the carers (37). In order to improve the outcomes of a stroke and therefore help relieve caregiver strain it is important to provide adequate training and education to carers (5). During the rehabilitation of a stroke patient it

must also be considered that the lives of the caregiver will also be affected as they now have to take on the role of caring for the stroke patient after discharge from the hospital (36). It is not only the stroke patients who need continuous professional help in order to maintain good health, the stroke care givers also need the to be given attention so that they can be able to maintain their own wellbeing (14).

1.6.5 Rehabilitation

The goal of rehabilitation is to attain maximum function for the stroke patient, in patients with disability it is to make sure that the patients are as independent as possible in activities of daily living (ADL's) and it is also to reduce the burden of the patient's caregivers. The best results of rehabilitation are achieved by using a multi-disciplinary approach (40). In support of the statement above a study by Clarke on the role of multidisciplinary care found that a multidisciplinary approach can be successful in a poorly resourced facility (41). The multidisciplinary care of stroke patients consists of physiotherapists, occupational therapist, speech and language therapist, stroke physicians, nurses and health care assistants (41).

However, there is not enough literature on the outcomes and recovery of stroke patients in most under resourced countries including South Africa. The lack of resources in these countries make it difficult to comply to the global guideline practices during rehabilitation and therefore result in the negative outcomes of the stoke patients (19). A study which compared the rehabilitation outcomes of stroke patients in a well-resourced rehabilitation centre in Germany and an under resourced rehabilitation centre in South Africa found that the stroke patients in Germany had better motor and upper limb recovery compared to those in South Africa (19).

Rehabilitation services can be provided to the patients during their hospital stay or as outpatients after they have been discharged. Inpatient rehabilitation is the preferred way for rehabilitation however in South Africa there are not many rehabilitation facilities in the public sector and those that are available are mostly in the urban areas. Another problem with prolonged hospitalization is that there are often challenges with the availability of beds in the public sector (40).

After a stroke, it is important for patients to adhere to all rehabilitation sessions as outpatients in order to be able to attain good functional outcomes from rehabilitation (8). Stroke patients who are physically active were found to be more satisfied with

their lives and have a better quality of life as opposed to those who were not physically active (42).

In South Africa some patients were found to have difficulty in accessing rehabilitation services due to unavailability of transport (13). A study done in a rural hospital in South Africa amongst physiotherapists found poor compliance to follow-up visits by stroke patients to be a serious problem (8). For instance, the patient's appointment for physiotherapy were often once or twice a week for about four months and it depended on their condition and on the availability of their caregivers (8). The most common reasons for poor compliance to follow-up visits were found to be the financial situation of the patient, migration to other areas and the long distance from their homes to the hospitals (8).

Another factor which can influence the outcome of rehabilitation is the limited resources in the hospitals, this can course poor compliance to the universal practice guidelines by the health care professionals (19). A study which was done in a rural area in South Africa has found that in areas where there is no rehabilitation facilities the patients are often discharged into the care of their families while they still have significant disability (40).

The rehabilitation goals of the patient are often decided on by the healthcare professional treating the stroke patient. The standardised assessment tools used are often done once and are done outside of the patient's home environment and community context (27). Factors such as the infrastructure and terrain in the patient's home are often not considered and these factors may serve as barriers towards the patient's mobility upon discharge. Standardised tools that are commonly used to establish the stroke survivors level of functional independence is the is the Stroke Specific Quality Of Life Scale (43), the Barthel Index Scale (13)(16) and the Stroke Impact Stroke (43). Even though the stroke patients and their caregivers may have difficulty in expressing the needs or rehabilitation goals it is important that both their goals as well as those of the health professional treating them are considered (27). The goals for rehabilitation should focus more on making sure that patients are satisfied with their lives and that they are still able to participate in leisure activities at home and in the community. Rehabilitation should not only focus on whether patients are independent in activities of daily living but also on whether the patient can

reintegrate into the community. A study done in a metropolitan area in Canada amongst stroke survivors found that stroke patients wanted an increase in their rehabilitation sessions as well as more social support (27). Caregivers must be actively involved in the rehabilitation of stroke patients and they should be given information and be given training by the physiotherapist, occupational therapist and speech therapist on how to assist the patients with transfers, mobilization and also assisting in activities of daily living (43).

1.6.6 Conclusion

Literature shows an increase in the number of people living with disability following a stroke both globally and in South Africa. It further highlights that the quality of life of patients who had a stroke is often decreased. Having a stroke does not only have an impact on the stroke survivor but also on the caregivers. Rehabilitation can therefore be helpful in improving the quality of life of the patients. Knowing the patient's quality of life is essential in planning the rehabilitation for the patients.

CHAPTER 2: METHODOLOGY

2.0 Introduction

This chapter outlines the methodology that was followed when carrying out this study. It provides a full description of the study design, study sites, study population, the sampling method used and the sample size. The methods used for data analysis in the study are also described. Lastly, this chapter outlines the ethical considerations that guided the execution of the study.

2.1 Study design

A quantitative, descriptive cross-sectional research design was used to identify factors that influence the quality of life of patients with disability post stroke. This type of design was selected to be able to best answer the research question. This is the best suitable design for this study because it aims to find an association between variables. In this study the variables of interest are assessed once and a relationship between them is determined, the participants were interviewed once, and no follow-up was done.

2.2 Study sites

The study was conducted in Mopani District which is in the Limpopo province. Mopani district consist of five sub districts namely: Greater Giyani, Greater Letaba, Greater Tzaneen, Ba-Phalaborwa and Maruleng (Figure 1). Mopani district has a population of approximately 1092507 people (44). It consists of 296321 households and 125 wards. Out of this population, 81% reside in rural areas, 14% in urban areas and 5% on the farms. Majority of the population speak Xitsonga or Sepedi languages. The study was conducted in the five public hospitals in Mopani district, Limpopo province. In total there are seven public hospitals in Mopani district; five of these hospitals were used in the study. These were Van Velden hospital, Letaba hospital, Sekororo hospital, Kgapane hospital and CN Phatudi hospital. These are all district hospitals except for Letaba hospital which is a regional hospital. Below is a map of Limpopo province, showing the different districts and sub-districts in the province.

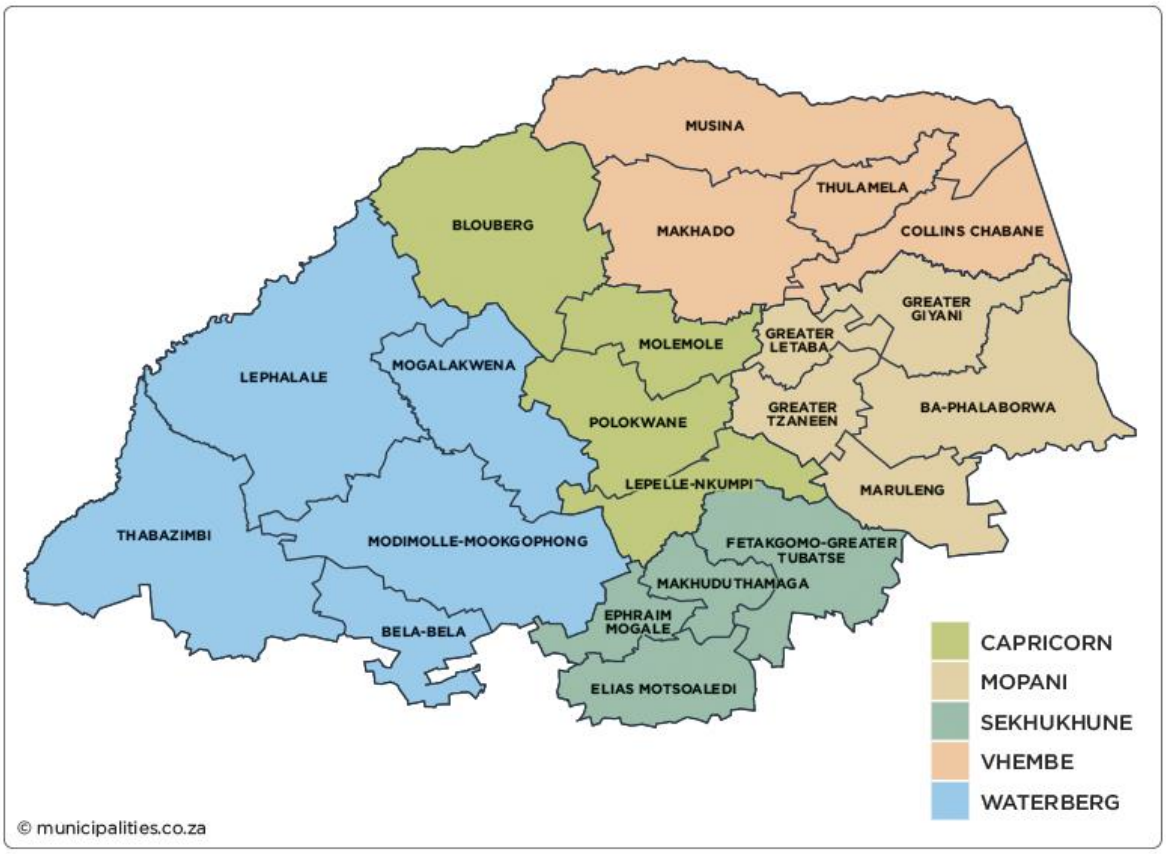

Figure 1 Limpopo province, districts and sub-districts

2.3 Study population

The study population consisted of stroke survivors receiving health care services at the five public hospitals in Mopani district. Participants who were coming to collect chronic medication and other health care services were approached to participate in the study.

2.4 Sampling and procedure

The five public hospitals in Mopani district were selected using convenient sampling approach. A convenient sample is done when It is impossible to get the whole population to be part of the study (45). The main objective of a convenient sample is getting the information from the part of the population that is accessible (45). One hospital was excluded due to the distance and the other one is a psychiatric hospital.

A total of 231 stroke patients were purposefully selected to participate in the study. The researcher was unable to recruit the sample size of 341 participants which was calculated. The researcher extended the data collection period by returning to the

hospitals in other months, however most of the participants were those that had already participated in the study. The reason for not being able to get 341 participants may be because of overestimating the population size as there was not no proper data on the number of stroke survivors in the district. Purposive sampling is used when the participants have certain characteristics that the researcher wants to explore or study. The researcher is responsible for deciding who forms part of the study based on the knowledge that they have or their experience (46). This was an appropriate approach as the target population was only patients with stroke.

Inclusion criteria

- The inclusion criteria were all patients aged 18 years and above
- Diagnosed with stroke and receiving health care services at any of the five public hospitals in Mopani district.
- The patients who took part in the study had to have had the stroke three or more months ago.

Exclusion criteria

- Participants were excluded from the study if they had one of the following conditions: stroke patients who had another disability prior to the stroke, as well as patients with receptive or expressive aphasia (47).
- Patients with injuries such as head injury, fractures or any other physical injuries were excluded from the study (47).
- Those with other diseases such as mental disorders or organ failure were also excluded as these conditions can also have an effect on a patient's quality of life (47).

Sample size calculation

The sample size was calculated using the online calculator of statistical software Raosoft.com (72). A sample size of at least 341 participants with a confidence interval of 95% was calculated. This calculation was based on a population size of 3000 with an expected frequency of 50%.

2.5 Measurements

Demographic questionnaire (Appendix A)

The data collection tools used were the interviewer administered demographic questionnaire (Appendix A) which was adapted from Mungana (2014) study who explored home based care and quality of life for people with disability in greater Johannesburg. The demographic questionnaire was used to meet the first objective which is to determine the socio-demographic characteristics of the stroke patients.

The demographic questionnaire gathered information on the following: age, sex, ethnicity, marital status, level of education, caregiver, livelihood, how long the patient had the stroke, affected side, attendance of rehab and HBC services and chronic conditions. The questionnaire consisted of 12 closed ended questions of which the participants had options to choose from and it also consisted of two open-ended questions relating to the patient's perception of their quality of life.

Stroke-specific Quality Of Life Scale (SSQOL) (Appendix B)

The stroke specific quality of life scale (Appendix B) was used to determine the QOL of the patients. The SSQOL scale was developed by Williams et al, 1999. The stroke specific questionnaire was developed because the available tools which were used to measure QOL such as the short form 36 and the Barthel index scale are not specific to stroke patients and they did not assess some of the factors which are specific to the stroke patients, for example they do not assess language and patients with stroke may have aphasia which can have an impact on their quality of life (48). The stroke specific quality of life scale consists of 12 domains namely: social role (five questions), mobility (six questions), energy (three questions), language (five questions), self-care (five questions), mood (five questions), personality (three questions), thinking (three questions), upper extremity function(five questions), family (three questions), vision (three questions) and lastly work/productivity (three questions).

The patients were asked to rate the different domains which included energy, family roles, language, mobility, mood, personality, self-care, social roles, thinking, upper extremity function, vision and work or productivity. The patients were asked questions regarding each domain then an overall mark was allocated. Each item was ranked on a five-point Likert scale whereby 1= completely agree and 5= completely

disagree. The score was calculated using the average of the 12 domains. The total score ranges from 49 to 245, with higher scores indicating a better QOL (49). This scale was used because it was suggested to be a valid and reliable measure of quality of life, the internal reliability was high with a chronbach`s cores > 0.073 (48). The SSQOL scale has also been used in other studies in African countries like Nigeria, however the tool has not been utilised in any South African studies. The SSQOL scale is reported to be the most specific and valid measure in determining the quality of life after stroke (49).

Pilot study

Before the study commenced the demographic questionnaire was piloted with three stroke patients who were not part of the study but were within the inclusion criteria. The pilot patients were coming to attend monthly physiotherapy sessions at Van Velden hospital which is one of the five hospitals in Mopani district which were selected for the study. From the pilot study it was clear that patients struggled to understand the open-ended questions about their quality of life. The question was therefore adjusted. Initially the first question was “How is your quality of life?” The participants did not understand the question and rather understood it better once it was rephrased as “Describe how your quality of life has been affected by the stroke”.

2.6 Data collection

Data collection took place from February to September 2017. The researcher was the sole data collector. When collecting data the researcher was based at the outpatient department of each hospital and stroke patients were seen after they had been to the doctor and others after their rehabilitation sessions. Data collection took place in the outpatients department consulting room, it allowed privacy and it was only the participant and the researcher who were present during the interview. The patients who came for chronic medication were referred to the researcher by the nurses and doctors after their consultation and those who came for rehabilitation were referred by the therapists. On the day of the data collection the doctors, nurses and therapist were notified about the study and asked to send all the stroke patients meeting the selection criteria to the researcher.

The questionnaire was completed by the researcher. Before the questionnaire was administered, the researcher started by introducing herself to the patients and

explained the aim of the study, its objectives and what will be expected from them. After providing the patients with this information they were asked for consent to participate in the study. Participants were also made aware that it was voluntary to partake in the study, upon giving consent the patients were asked to sign a consent form. The questionnaire was translated by the researcher for the participants and each interview took about 10 mins to complete.

The patients files were used to gather medical information related to the diagnosis and comorbidities

2.7 Data analysis

The socio-demographic data and the QOL scores were captured using Microsoft excel version 2010 for management and display purposes and then transferred into STATA version 13 for analysis. Before data analysis, data cleaning and data coding was done. This involved allocating a number to each question answer for e.g. with gender, 1= Female and 2= Male. The common errors in the data sets like duplicates and extreme values were corrected using STATA comments.

When analysing the demographic data, the categorical variables were described as counts and proportions. On STATA the categorical variables statistics were generated using the tab comment and the variables were presented in bar graphs and table form.

When analysing the SSQOL scale an average of each domain was calculated and the averages of the different domains were compared. A minimum score is 49 points and the maximum score is 245 and the higher the points obtained the better the quality of life, low scores are those less than 60% (<147 points). The same scores were used in a study conducted in Brazil which evaluated the quality of life and depression of patients in rehabilitation after stroke (50). A chi square was used to determine the association between the stroke specific quality of life and the different socio-demographic factors. A two-way cross tabulation was used, the exposure variable is the socio-demographic factors and the outcome is the stroke specific quality of life and the Level of p-value is <0, 05. In addition, multiple regression analysis was conducted to examine the relationship between the multiple factors and how they affect the quality of life of the patients. The open-ended questions were analysed quantitatively using summative content analysis. This method is best for

analysing written data from different sources and used in supporting the evidence (51). The frequencies of the open-ended answers are reported.

2.8 Ethical Considerations

Ethical clearance for the study was granted by the University of the Witwatersrand Human Research Ethics Committee (M160556) (Appendix C). Approval for the study was also obtained from the Limpopo Department of Health (Appendix D). The Mopani district as well as the CEO's from all the institutions which were part of the study (Appendix E) also granted permission to conduct the study.

Before interviewing patients, the study was explained to the participants and an information letter (Appendix (G) which outlined all the details of the study was read and explained to every participant. The participants were made aware that they could withdraw from the study at any time without reason and that their responses were confidential and they would not be victimized in any way. The participants were then given a written consent to participate in the study (Appendix F). To ensure confidentiality, no names were written on the questionnaires. The questionnaires were coded numerically from the first to the last participant. The participants were informed that their information was only for research purposes and all the information will only be reported on as a group and not individual responses. All the completed questionnaires were kept in a locked cupboard and data on the excel spread sheet were kept in a password protected file and only the researcher and supervisors has access to it. These documents will be kept for a period of five years.

Conclusion:

This chapter provided an outline of the methods followed in collecting and analysing data, it gives a general understanding of what transpired during the study.

CHAPTER 3: RESULTS

3.0 Introduction

This chapter summarises the key findings of this study. It reports on the socio-demographic characteristics of the study participants, the quality of life of the study participants, the association between the quality of life and socio demographic characteristics as well as comparisons between the average QOL scores of the participants.

3.1Socio-demographic characteristics

This part of the results aims to answer the first objective of the study related to the socio-demographic characteristics of patients with disability post stroke.

A total of 231 participants out of a total of a calculated sample size of 341 participants took part in the study signifying a 68% response rate. As shown in Table 3.1 below, the majority of the participants were females (55%). The average age of the participants was 57.37 years (SD = 13.89) with a range of 24 -93 years. In terms of the race, the majority of the participants were black (99. 1%). Most participants were single (48. 1%), followed by those who were married (32. 5%). Concerning the educational level, those who completed the secondary education were 44. 2% followed by 23. 4% who only had primary education and 4.3% who had vocational training. The majority of the participants reported to have their son/daughter as their primary caregiver (32%), followed by the spouse (28. 6%). The findings further reveal that the majority of the participants received social grant (81.8%) as their main source of livelihood and only 13. 4% were employed.

Table3.1: Socio-demographic characteristics (n= 231)

Variables	**Mean (SD)**	
Age (categories)	57.37 (13.89)	
	n	**%**
24-30	3	1.4
31-35	16	7.0
36-40	6	2.6
41-45	21	9
46-50	17	7.3
51-55	23	10
56-60	24	10.3
>60	121	52.4
Gender		
Male	104	45
Female	127	55
Race		
Black	229	99.1
White	2	0.9
Marital Status		
Married	75	32.5
Single	111	48.1
Widowed	25	10.8
Divorced / Separated	20	8.7
Education Level		
Primary	54	23.4
Secondary	102	44.2
Tertiary	20	8.7
Vocational	10	4.3
None	45	19.5
Main Caregiver		
Spouse	66	28.6
Parent	45	19.5
Grandparent	1	0.4
Brother/Sister	17	7.4
Son/Daughter	74	32.0
Self	9	3.9
Other	19	8.2
Source of Livelihood		
Employed	31	13.4
Social grant	189	81.8
Remittances	1	0.4
Petty trade	1	0.4
Self-employed	1	0.4
Shops	3	1.3
Pensioner	2	0.9
Incapacity leave	1	0.4
Unemployed	2	0.9

Table3.2 participants per hospital (n=231)

Hospital	n	%
Letaba	53	23
Dr CN Phatudi	23	10
Kgapane	51	22
Sekororo	39	17
Van Velden	65	28

Medical history information was also gathered as part of socio-demographic information. Table 3.2 below shows the results of the sample's medical history. The majority of the participants reported to have had the stroke five or more years ago (38. 1%) whilst 32. 5% reported to have had the stroke 2-5 years ago. The stroke affected the dominant side of participants (51.9%) while 48.1% non-dominant side were affected. The results further show that most of the participants did not attend any rehabilitation (65. 8%). Of those who were attending rehabilitation, the majority attended physiotherapy (42. 9%), only 1.3% attended occupational therapy and 20.8% attended both occupational therapy and physiotherapy. The reason for not attending rehabilitation during the study was reported to be mostly due to completion of the rehabilitation programme and being discharged from therapy (22.9%), followed by 6.9% who reported to have not been referred. When reporting on chronic disease, the majority of the participants had only hypertension (52. 8%) followed by 16.5% with both hypertension and diabetes. Participants who reported to have TB were 3.5% and 10% reported to be HIV positive. Most of the participants reported not receiving HBC (89. 6%) and only 8. 7% reported to be receiving it. Of those who received home-based care, 3.9% said the services provided was monthly basic body exercises and monthly treatment adherence support (3.0%).

Table 3.3 medical history (n=231)

Variables	n	%
Duration of Stroke		
Less than 1 year	68	29.4
2 – 5 years	75	32.5
More than 5 years	88	38.1
Affected sides		
Dominant	120	51.9
Non-dominant	111	48.1
Attendance of rehab		
Yes	79	34.2
No	152	65.8
Rehabilitation service		
Physiotherapy	99	42.9
Occupational therapy	3	1.3
Physiotherapy and Occupational therapy	48	20.8
Physiotherapy, Occupational therapy and Speech	9	3.9
Reason for attending		
Not referred	16	6.9
Discharged	53	22.9
Defaulted service	1	0.4
Other	1	0.4
Chronic disease		
No disease	15	6.5
Hypertension	122	52.8
Diabetes	12	5.2
Epilepsy	5	2.2
TB	8	3.5
HIV	23	10.0
Hypertension and Diabetes	38	16.5
Hypertension and HIV	1	0.4
Home Based Care		
No	207	89.6
Yes	20	8.7
Service received from HBC		
Weekly treatment and prevention of pressure sores	1	0.4
Bi-weekly meal preparation and feeding	2	0.9
Monthly treatment adherence support	7	3.0
Monthly Basic body exercise	9	3.9
Monthly light house cleaning	1	0.4

The participant's functional abilities were also explored as part of the socio-demographic characteristics.

Table 3.4 below reports on the functional abilities of the respondents. In this section the participants were asked to rate their own functionality as good (independent in doing activities), fair (needed minimal assistance) or poor (needed maximal assistance). Bed mobility was rated as good by 95.7% and poor by 0.45% of the participants whilst walking was rated as good by 32.5% and poor by 14.3%. Bathing was rated good by 74.9% and poor by 1.7% whilst dressing was rated good by 76.2% and poor by 1.7%. In terms of eating 97% rated good and 0.9% reported poor. The bowel control was rated good (97.8%), 0.9% rated fair and 0.4% rated poor. With regard to the range of motion (ROM) of the unaffected side, 98.7% was rated good and 0.4% reported poor. The ROM of the affected side was rated good by 16.0% and majority of the participants reported poor (62. 8%).

Table3.4 Participants perceived functional ability (n=231)

Variables		n	%
Bed Mobility			
	Good	221	95.7
	Fair	8	3.5
	Poor	1	0.4
Walking			
	Good	75	32.5
	Fair	123	53.2
	Poor	33	14.3
Bathing			
	Good	173	74.9
	Fair	54	23.4
	Poor	4	1.7
Dressing			
	Good	176	76.2
	Fair	51	22.1
	Poor	4	1.7
Eating			
	Good	224	97.0
	Fair	6	2.6
	Poor	1	0.4
Bowel control			
	Good	226	97.8
	Fair	1	0.4
	Poor	2	0.9
ROM of unaffected side			
	Good	228	98.7
	Fair	2	0.9
	Poor	1	0.4
ROM of affected side			
	Good	37	16.0
	Fair	49	21.2
	Poor	145	62.8

3.2 Quality of life of the participants

3.2.1 The overall Quality of life of the participants

In this section the overall quality of life of the participants was calculated. This section aims to answer the second objective which is; to determine the quality of life of patient with disability post stroke. Individuals with scores below 147 were considered to have a poor quality of life and those with a score above 147 were considered to have a good quality of life.

Figure 3.1 below show that the majority of the participants had good quality of life (66%) and (33.8%) of the study participants had poor quality of life.

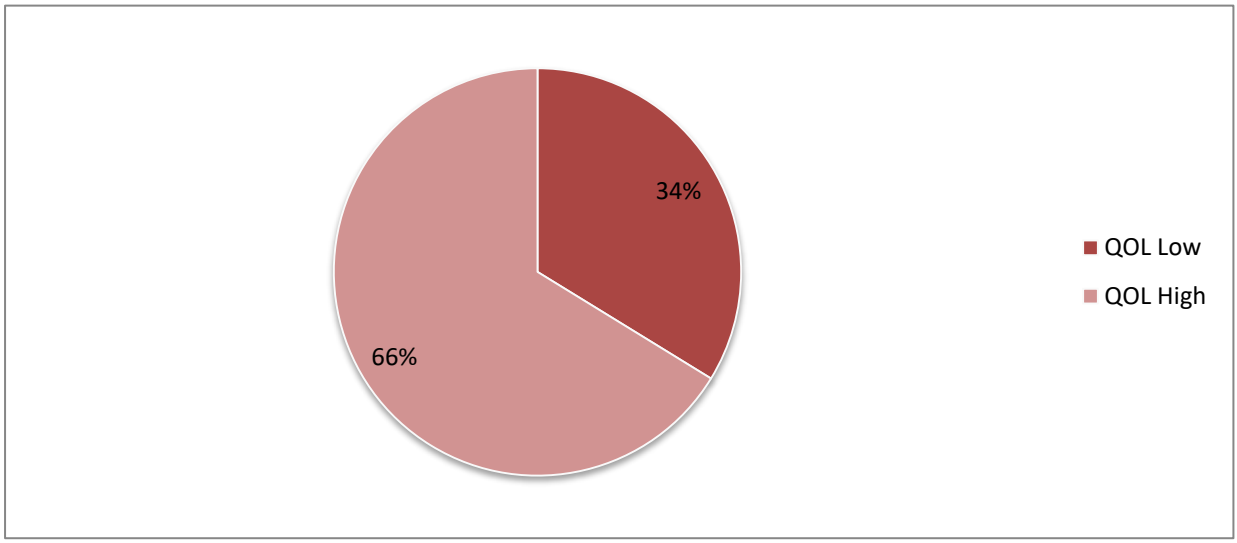

Figure 3.1 Overall Quality Of Life (n=231)

3.2.2 Perceived change of quality of life for stroke survivors post stroke

The findings from the open-ended questions further reveal perceived change of quality of life for stroke survivors post stroke. Summative content analysis was conducted and the following issues as presented on table 3.4 below were reported; 32% of the participants expressed difficulty with mobility including performing daily functional activities and travelling. The excerpts below illustrate how participants felt regarding mobility.

"I have a problem with climbing the bus, it is too high" (Participant 2; 63 years, female, primary education, unemployed).

"With a wheelchair it is difficult to walk around the house or in the streets because of the gravel" (Participant 52; 39 years, male, secondary education, unemployed).

Due to mobility challenges, the majority of the participants (35%) reported high dependence on family members and relatives for self-care, grooming and performing house chores.

"After the stroke I depend on other people a lot for help"(Participant 10; 39 years, male, secondary education, unemployed).

“I can’t stay alone anymore because I am not able to walk anymore’’ (Participant 32; 60 years, male, secondary education, unemployed).

Other recurring issues which were reported on are pain and weakness expressed by 19%.

“I feel tired most of the time and I have to rest” (Participant 14; 50, male, primary education, unemployed).

“I get tired easily and my knees hurt, the medication is not helping” (Participant 52; 60 years, female, primary education, unemployed).

Lifestyle changes were also noted by a few participants (4%) who highlighted challenges around not moving with family and friends and changing eating habits.

“I’m unable to go out with friends and family like before” (Participant 26; 24 years, male, secondary education, unemployed).

“I have to take better care of myself and not drink and exercise” (Participant 130; 61 years, male, tertiary education, unemployed).

Low self-esteem was reported by 1% of the participants.

“It is so frustrating because I’m still younger now I worry if I can find a wife in this condition” (Participant 96; 60 years, female, secondary education, unemployed).

“The family no longer gives me respect as before, I no longer feel like the head of the family” (Participant 44; 64 years, male, primary education, unemployed).

Relationship strains (0.4%) were also noted by some participants.

“My relationship with my boyfriend is not the same since the stroke, we always fight” (Participant 38; 32 years, female, no education, employed).

Financial constraints (0.9%) were reported by some participants.

“I have to come to the hospital every month and it costs money” (Participant 56; 63 years, male, tertiary education, unemployed).

And lastly 8% expressed no change in their quality of life post stroke.

“I am still able to work I have no complains” (Participant 3; 68 years, female, no education, unemployed).

"It's been a long time I'm used to it, my children are supportive" (Participant 36; 70 years, male, no education, unemployed).

Table3.5 Perceived change of quality of life for stroke survivors for stroke

Variables	**n**	**%**
Mobility	75	32.5
Dependency	81	35.1
Pain and weakness	42	18.2
No complains	19	7.8
Life style	9	4.0
Low self-esteem	3	1.3
Finances	02	0.9
Relationship strains	01	0.4

3.2.3 How participants would like to improve their quality of life

The findings of the study suggest that most of the participants would like to be more independent in terms of being able to take care of themselves at home and have the ability to assist around the house. As such 34% of the participants expressed the need for self-reliance. The excerpts below illustrate how participants felt regarding the need for self-reliance:

"To be able to bath and dress on my on my own and not rely on my wife so much because she gets tired" (Participant 12; 46 years, male, primary education, unemployed).

"I want to be able to do everything by myself and not pay people" (Participant 23; 42 years, male, no education, unemployed).

The need to be more mobile was expressed by 36% of the participants.

"I want to be take medication at home sometimes taxis don't allow wheelchair so I have to hire transport" (Participant 208; 72 years, female, no education, unemployed).

"The roads at home are not good for the wheelchair it gets damaged easily" (Participant 227; 79 years, male, no education, unemployed).

Some of the participants (16%) reported that they are satisfied with their quality of life.

"It has been long, I have accepted my condition" (Participant 211; 93 years, male, no education, unemployed).

"Physiotherapy is helping me. If I could attend more I will get better" (Participant 230; 41 years, male, secondary education, unemployed)..

Social exclusion (11%) was noted amongst the participants.

"To be able to do things like go out with my friends and walk properly"(Participant 26; 24 years, male, secondary education, unemployed).

"I want to go out and socialize because when I'm at home I stress a lot" (Participant 98: 66 years, male, primary education, unemployed).

Difficulty accepting condition (1%) was also noticed amongst other participants.

"If I can be able to use both hands then I can go back to work" (Participant 47;55 years, female, tertiary education, employed).

"I would like to be strong like before" (Participant 142; 61 years, male, secondary education, unemployed).

Lastly 2% of the participants had other concerns related to improving their quality of life.

"Physiotherapy is helping me if could attend it more I can get better" (Participant 230; 41 years, male, secondary education, employed).

"When we go to the hospital the crutches are always not available" (Participant 204; 69 years, female, secondary education, unemployed).

Table3.6 How participants would like to improve their quality of life

Variables	**n**	**%**
Mobility	82	36
Self-reliance	79	34
Satisfied	36	16
Social	26	11
Other concerns	05	2
Difficulty accepting the condition	03	1

3.3 The Association between the QOL and socio- demographic factors

This section reports on the association between the socio-demographic factors and the participants QOL. It aims to answer the third objective which is; to determine the association between the socio-demographic factors and the quality of life of patients with disability post stroke.

3.3.1 Age and Quality of Life

The ratings in Figure 3.2 below display the quality of life between the different age categories of the participants. Those with ages ranging from 24-30 had good quality of life (0. 9%) and 0. 5% had poor quality of life. Participants with ages between 31-35 years had good quality of life (3. 5%) and similarly 3. 5% had poor quality of life. Those with ages between 36- 40 years participants displayed similar percentage for both good quality of life (1. 3%) and poor quality of life (1. 3%). Furthermore, participants with ages between 41-45 years had good quality of life (6%) and 3% had poor quality of life. In participants between 46- 50 years, 6.4% had good quality of life and 0. 9% had poor quality of life. Those between the ages of 51-55 years, 8.7% had good quality of life and 1. 3% had poor quality of life. In participants between 56-60 years 7.8% had good quality of life and 2. 5% had poor quality of life. Lastly in participants over 60 years, 31.6% had good quality of life and 20.8% had poor quality of life. Lastly the majority of the participants were over 60 years and had good quality of life (52.4%). Insignificant correlation was found between QOL and the age (coefficient=11.731; p= 0. 008).

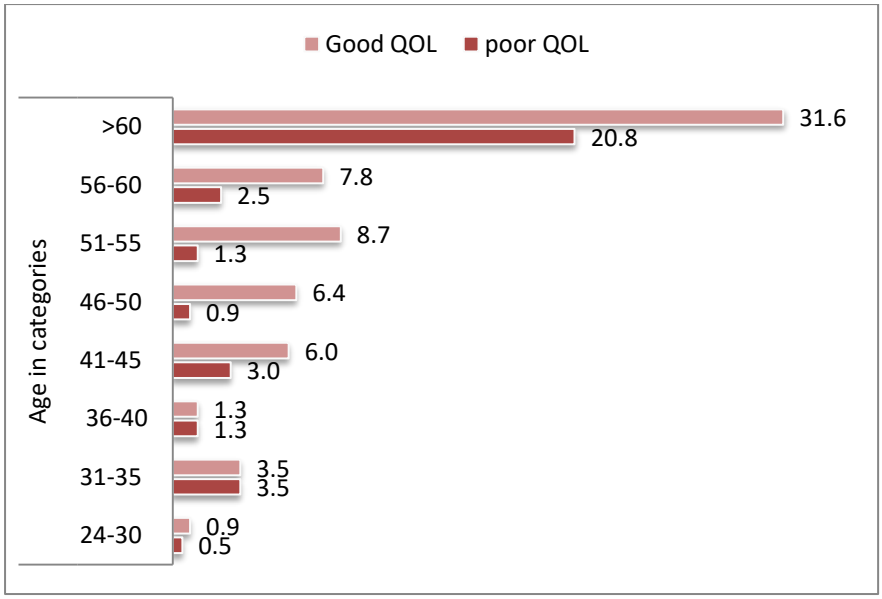

Figure 2.2 Age and Quality Of Life (n=231)

3.3.2 Gender and Quality Of Life

When considering gender in relation to perceived QOL, figure 3.3 below shows that 35. 5% males had good QOL and 19.5% had poor QOL. With regards to females, 30.7% had good quality of life and 14.3% had poor QOL. Insignificant correlation was found between gender and QOL (coefficient = 0.350; p= 0.554).

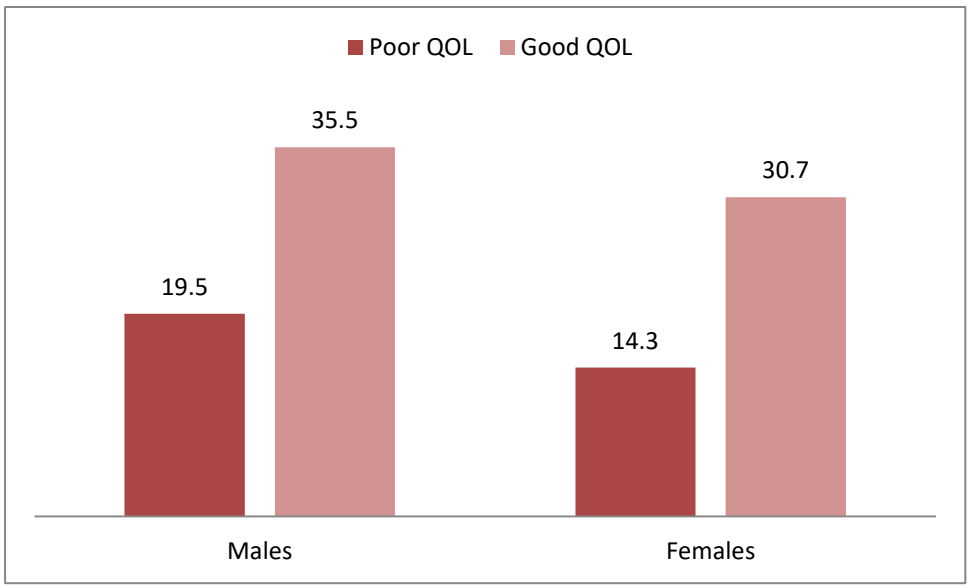

Figure 3.3 Gender and Quality Of Life (n= 231)

3.3.3 Race and Quality Of Life

When considering ethnicity and QOL, figure 3.4 below shows that majority of the study participants were black and of which 66.2% had good QOL and 32.9% had poor QOL. The only white participants who made up the study were 0. 9% and had poor QOL. Significant correlation was found between ethnicity and QOL (coefficient = 3.957; p = 0.047).

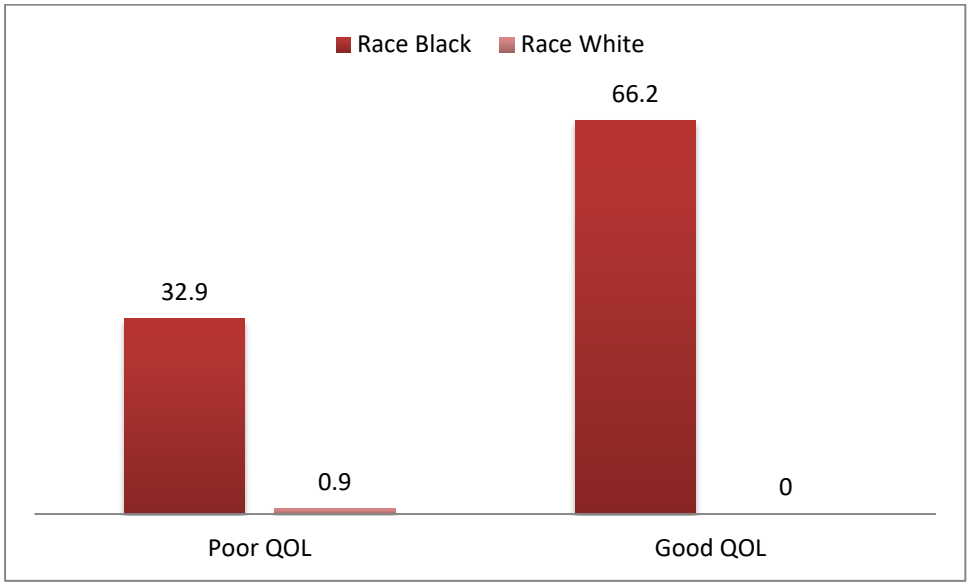

Figure 3.4 Race and Quality Of Life (n=231)

3.3.4 Marital status and Quality Of Life

When considering marital status in relation to QOL, figure 3.5 below shows the relationship between Marital status and QOL , Amongst participants who had good QOL 24.7% were married, 32.5% single, 5.6 % widowed and 3.5% divorced. Those who had poor QOL 7.8% were married, 25.6% single, 5.2% widowed and 3.5% divorced. Significant associations were found between marital status and QOL (coefficient = 11.706; p = 0.008).

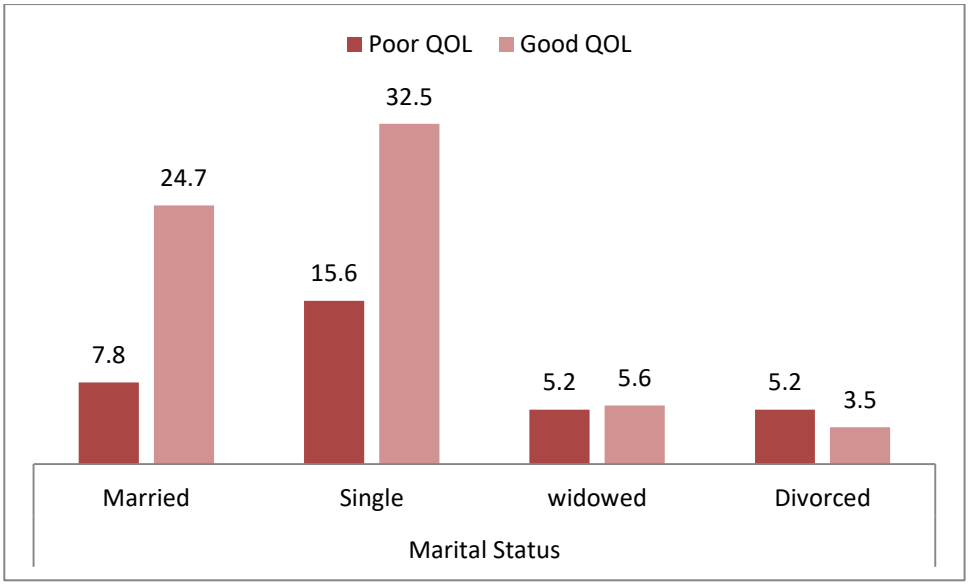

Figure 3.5 Marital status and Quality Of Life (n=231)

3.3.5 Highest education level and Quality Of Life

When considering highest education level in relation to QOL, figure 3.6 below shows the relationship between the participant's highest education level and their QOL. Amongst those who had good QOL 14.7% had primary education, 31.6% had secondary education, 6.5% tertiary education, 3.5% vocational schooling and 9.9% had no education. Amongst those with poor QOL 8.7% had primary education, 12.5% had secondary education, 2.2% had tertiary education, 0.9% had vocational schooling and 9.5% had no education. Significant associations were found between the participants highest level of education and their QOL (coefficient = 32.734; p = 0.000).

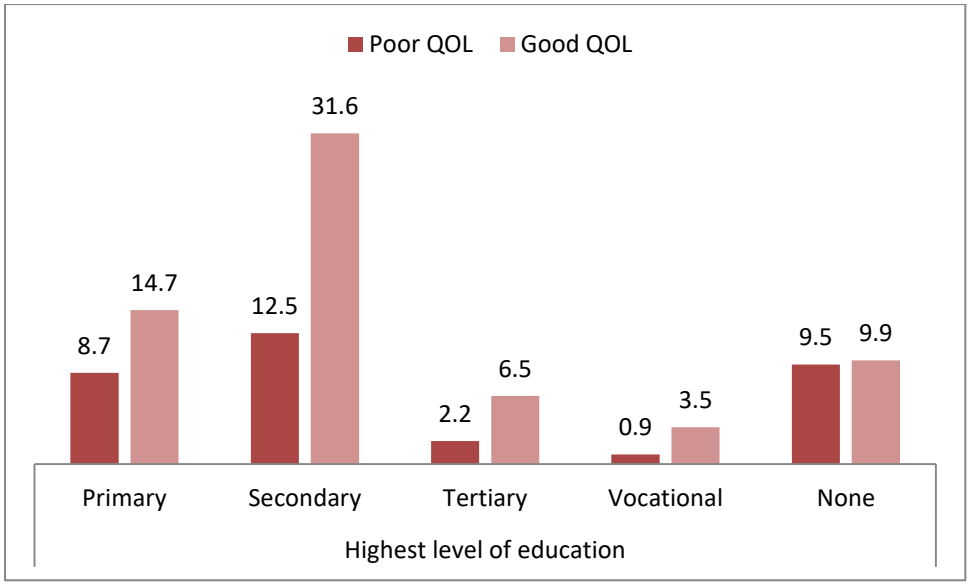

Figure 3.6 Highest education and Quality Of Life (n=231)

3.3.6 Source of livelihood and Quality Of Life

When considering source of livelihood and QOL, figure 3.7 below shows the association between the source of livelihood and QOL, of the participants who had good QOL 13. 1% were employed, 50. 2% depended on the social grant and 3% had other sources of income. Those who had poor quality of life 0.4% employed 31. 6% depended on the social grant and 1.7% had other sources of income. Significant associations were found between the participants main source of livelihood and QOL (coefficient = 21.121; p = 0.007).

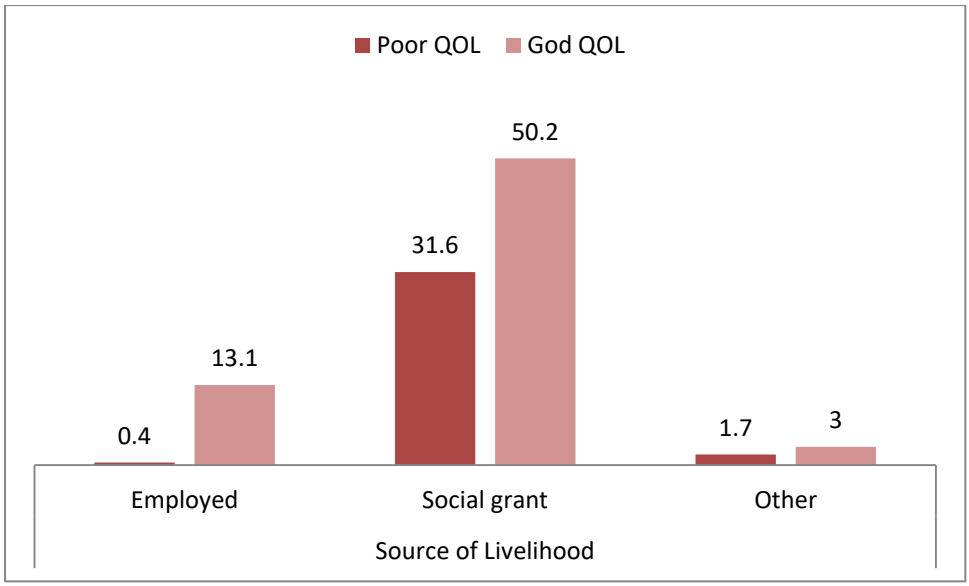

Figure 3.7 Source of livelihood and Quality Of Life (n=231)

3.3.7 Relationship between socio-economic factors and Quality Of Life

The following exposure variables related to socio-demographic factors: age, gender, ethnicity, marital status, education level, main caregiver and source of livelihood were tested in a univariate analysis for association with the outcome variable which is the quality of life. The findings suggest that age, marital status and source of livelihood had a highly significant relationship with quality of life at a p-value of 0.001, 0.003 and 0.008 respectively. Table 4 below shows that there were significant associations between the variables.

Table3.7 Relationship between socio-economic factors and Quality Of Life

Variable	Coefficient	SE	T	p-value	95% CI
Age†	-0.646	0.190	-3.39	0.001	-1.021 – -0.271
Gender‡	-1.914	5.432	-0.35	0.725	-12.616 – 8.788
Ethnicity‡	-30.334	29.107	-1.04	0.298	-87.687 – 27.019
Marital status†	-9.073	3.007	-3.02	0.003	-14.998 – -3.149
Highest education level‡	-2.406	1.918	-1.25	0.211	-6.185 – 1.374
Source of livelihood†	-6.494	2.437	-2.67	0.008	-11.295 – -1.693

† P-value is less than 0.05; ‡ p-value is greater than 0.05

3.3.8 Comparing of the mean scores of the different domains on the stroke specific quality of life scale

In this section the average scores of the different domains of the SSQOL scale are compared. This section aims to answer the fourth objective which is: To compare the average scores of the different domains on the stroke specific quality of life scale. The mean scores for the SSQOL domains are presented in table 5 below. Participants with good quality of life had the lowest score in the social domain (60%), Upper limb function (64%) and work (60%). They obtained the highest scores in vision (93%), thinking (93%) and language (96%). Participants with poor quality of life had the lowest scores in family roles (40%), social (32%) and work (33%). Similar to those with good quality of life, participant with poor quality of life obtained the highest scores in vision (87%), language (80%) and thinking (73%).

Table3.8 Mean scores and percentage scores for the domains of the Stroke Specific Quality Of Life Scale (n=231)

Domain	Poor QOL Mean Total SSQOL Score (SD)	Score (%)	Good QOL Mean Total SSQOL Score (SD)	Score (%)
Energy (15)	7 (3.8)	47	11(4.2)	73
Family Roles (15)	6 (2.7)	40	10 (3.9)	67
Language (25)	20 (6.1)	80	24 (2.6)	96
Mobility (30)	13 (4.6)	43	22 (6.7)	73
Mood (25)	15 (6.8)	60	22 (4.2)	88
Personality (15)	10 (4.3)	67	13 (3.5)	87
Self-care (25)	12 (4.6)	48	18 (5.5)	72
Social (25)	8 (3.7)	32	15 (7.3)	60
Thinking (15)	11(3.8)	73	14 (2.2)	93
Upper Extremity Function (25)	11 (4.6)	44	16 (1.8)	64
Vision (15)	13 (3.2)	87	14 (1.8)	93
Work (15)	5 (2.4)	33	9 (4.0)	60

Conclusion

A total of 231 participants were included in the study. The majority of the participants were found to have a good quality of life but the participants expressed difficulties with performing some daily functional activities and travelling. Age, race, gender and education were found to have an association with Quality Of Life of the stroke survivors and social, work and family domains was scored poorly by both participants with poor and good quality of life. The next chapter which is the discussion will discuss these results in detail and give comparisons and make reference to past literature.

CHAPTER 4: DISCUSSION

4.0 Introduction

This chapter discusses the results that were presented in the previous chapter and also makes reference to literature. The results are discussed according to the study objectives. Study limitations are also discussed.

A total of 231/341 participants took part in the study signifying a 68% response rate. For this type of study a response rate of 68% is acceptable, if the study was a randomised control trial with an intervention and a comparison group then a higher response rate would be more admirable (75). The results can therefore answer the aim of the study which is to determine factors that influence the quality of life of patients with disability post stroke in Mopani District, Limpopo province.

4.1Socio demographic characteristics

This section responds to the first objective which is to describe the socioeconomic demographic characteristics of the stroke survivors**.**

From the literature these socioeconomic demographic characteristics have been found to influence quality of life after stroke and therefore they were all investigated in this study on rural patients with stroke

In terms of age, this study found that in a rural setting stroke affected both the older and the younger generation as reflected by the age categories of between 24 and 93 years. Similarly, a study by Wasserman that looked at community-based care of stroke patients in a rural community reported that 59% of the stroke patients were < 20 years old (5). A study by Kusambiza-Kiingi that looked at levels of community integration and quality of life in central Johannesburg reported a mean age of 54 with ages ranging between 20- 79 (20). Other studies show that stroke is more prominent in the elderly because of the changes that occur in the brain with age (52). Based on the above mentioned studies, it could be deduced that the rural or urban context do not influence the age of the stroke survivors as the age distribution in this study is similar to those which were conducted in urban areas. The above mentioned statement can be supported by findings from a study by Kaur on stroke profile and outcome between urban and rural regions, this study suggests that the difference in risk factors between urban and rural areas are the prominence of hypertension,

hyperlipidaemia and alcohol consumption in rural areas and the prominence of smoking in urban areas (53).

In terms of race, the majority of the participants were black, which is representative of the research site. From the current study findings it cannot be concluded that race has a significant impact in terms of how stroke affects different ethnic groups. However, in a study by Connor, hypertension was identified as one of the most prevalent risk factors of stroke in all population groups but mostly common amongst blacks (54) therefore black people will likely be affected by stroke.

In terms of gender the majority of the participants were female. This may be because females are more likely to seek medical help than males. A study by Redondo on gender difference in the utilization of health care among the elderly reported that women over 60 years consulted medical practitioners and used medication more frequently than males (55). Similar findings were reported in a study by Wang in the United Kingdom however this difference declined when looking at both men and women receiving similar medical treatment (56). There are differences in the findings in literature about gender and stroke between different studies. In support of the current project, a research project by Kusambiza-Kiingi reported more females than males stroke survivors, the study was however conducted in an urban context and included participants seen at home visits (20). While Gbiri and Ntsie reported on an equal number of both males and females and more males ,respectively (57);(32). The study by Ntsie was different to the current study in terms of only having stroke survivors that were employed prior the incidence of the stroke (32). Studies on gender difference in stroke incidence suggests that the high number of stroke in females than males may be because of the increased life expectancy in females than males as stroke is more common with increase in age (58);(59).

In the current study most participants were single and their main caregiver was reported to be their son/daughter. It is important that stroke survivors have support at home because most often they are not functional upon discharge from the hospital (37). Different findings were reported in studies by Maleka and Ganapath on the caregiver burden associated with caring for a stroke patient both reported separately majority of the participants in their studies were married (20);(30). Even though an individual may be single, a common practice in Mopani district is that people do have

life partners with whom they have children with hence the main caregiver was reported to be their son/daughter.

This study revealed that secondary education was the highest level of education obtained by the participants with most of them reporting being unemployed. Stroke survivors who are well educated may be able to get a job after their recovery and therefore have a better quality of life. Similarly to the current study other studies conducted about the quality of life of stroke survivors by Baumann and Kusambiza-Kiingi in urban areas have also reported stroke survivors to have lower educational level and unemployment (60);(20). On the contrary, a study by Abubakar on health-related quality of life of stroke survivors suggests that the level of education has no influence on the stroke survivor's quality of life, the study sample was different from that of the current study as it included stroke survivors that had the stroke from three months before data collection (17). Due to the phenomenon of low levels of education, people are more likely to perform physical labour at work and therefore become unemployed when they are not reinstated to their positions after having a stroke thus resulting in dependence on social grants hence the high levels of unemployment reported amongst stroke survivors. These results are also supported by the findings of other studies that show that vocational retraining is not part of the rehabilitation for stroke survivors (61) and because of the high levels of unemployment most stroke survivors prefer the disability grant than vocational training (29).

4.2 Participants Medical history

Most of the participants within the current study reported to have had the stroke for more than five years. Living with long-term disability post stroke can have an impact on the stroke survivors quality of life especially with the advancing in age (14). Similar to the current study Stroke survivors in both urban and rural areas were reported to have had the stroke for over 5 years in a study conducted by Maleka on the development of an outcome measure to assess community integration (62). These findings suggests that stroke survivors live longer after their incident and support the findings that the prognosis of stroke has improved over the years (63).

Within this current research, the majority of the participants reported to have not received home-based care, this may be because the participants were all receiving

service at the hospitals, patients who normally receive home-based care services are those who are bedridden or are unable to get to the health facilities.

In terms of chronic diseases majority of the participants reported to have hypertension. If a patient's blood pressure is not controlled it can lead to a recurrent stroke (64). Recurrent strokes are often severe and can lead to a poorer quality of life or death. Similar to the findings of the current study, a study by Nuttaset on the quality of life post stroke rehabilitation among rural and urban patients reported that majority of the participants had hypertension (65). The findings from both studies can be supported by a study on burden of stroke in rural South Africa by Maredza who suggested the burden of stroke in South Africa can be attributed to hypertension (6).

4.3 Quality of life of patients with disability post stroke

This section responds to the second study objective which is to determine the quality of life of the stroke survivors.

4.3.1 Participants perceived functional ability

The majority of the participants reported to have good functional ability in bed mobility, bathing, dressing, eating and ROM of the unaffected side. The results may be attributed to the fact that most of the participants had attended rehabilitation (either physiotherapy and/or occupational therapy). This findings support studies that suggest that rehabilitation is important in attaining good functional outcome in stroke patients (16); (40).

In terms of walking most of the participants rated their ability to walk as fair. Hence, the participants in this study expressed the need to be more mobile. Different findings were reported in a study by Baumann where poor functional mobility was reported, this study sample was different to that of the current study as it also included stroke survivors that are hospitalised and those with aphasia (60). The findings of the current study may be supported by a study by Maleka which was conducted in rural, low socioeconomic area whereby a loss or restriction of mobility was identified as one of the problems faced by stroke survivors in that context, as the participants reported difficulty in walking because of the rocky terrains (66). The difficulty in walking may also be attributed to the neurological impairments that result from a stroke such as; poor balance, loss of strength and poor motor skills and cognition (67). There are limited studies that compare the functional outcomes of

stroke patients in the rural and urban areas however; a study conducted in Thailand found that there was no difference in functional outcomes of stroke patients in rural and urban areas post rehabilitation (65). Context may have an impact on a stroke survivors quality of life especially in terms of mobility, using an assistive device on an uneven surface can be difficult as compared to a tarred surface.

4.4 The quality of life of stroke survivors

This current study found that the overall perceived QOL among the participants was good. This may be because most of the participants reported that they were able to perform most daily activities such as eating, dressing and going to the toilet independently. This finding is similar to that of Akosile that reported good QOL of stroke survivors, However contrary to the current study their study participants were not only those seen in the hospital but also stroke survivors recruited from the community (22). Contrary results were reported in a study conducted in three tertiary hospitals in Kenya where the stroke survivors reported poor quality of life, however unlike the current study this study was amongst young adults aged between 45- 49 years using the short-form 36-item measurement tool (68). Additionally, a study by Kusambiza-Kiingi conducted in Johannesburg which also used the SSQOL scale reported that the quality of life of the stroke survivors was poor. The difference in the result may be because this study also included patients who were seen during home visit and at community health centres. There was also a difference in the context as this study was conducted in an urban area and unlike the current study ,this study excluded participants who had a stroke for more than five years(20). Patients who are seen at home visits may have poorer quality of life as they may not be able to go to the hospitals . Patients who are seen during home visits are often those who cannot go to the health facilities, often being those who are bedridden and depend on their caregivers. Although the two studies have been done in different settings, one being rural and the other urban the comparison cannot be disputed; a study which looked at the quality of life of stroke survivors in rural vs. urban areas reported that the participants area had no effect on their quality of life (65). Similar findings were reported in a study conducted in South Africa, where participants from both urban and rural areas reported having challenges in performing activities of daily living (66).

From these findings we may therefore conclude that the rural context has no effect on the quality of life of stroke survivors. Although the quality of life of the participants was rated as good from the SSQOL scale, Participants expressed the need to be more self-reliant, mobile and social. Similarly in a study by Hartigan on stroke survivors perception of their health, stroke survivors reported the need for self-care and social participation. This study similarly only consisted of participants who were recruited from the hospital (69).

4.5 Association between socio- demographic factors and QOL

This section responds to the third objective which is to determine the association between the socio-demographic factors and the quality of life of the stroke survivors.

This study found a significant association between QOL and the following socio-demographic factors; age, race, marital status, level of education and source of livelihood. The study findings are in line with other studies by Baumann and Khalid who suggested an association between the same socio-demographic factors and QOL, contrary to the current study both studies also included interviewing caregivers of participants with aphasia (60); (70). Similarly a study by Nicholas-Larsen whose study was on factors that influence the QOL of stroke survivors during sub-acute recovery also found an association between QOL and the socio-demographic factors, however unlike the current study that used the SSQOL scale this study used the Stroke Impact Scale and included participants with stroke from three months (71). There is lack of research on the association between the socio-demographic factors and the QOL of stroke survivors. This lack of information made it difficult to make more comparisons with the current study findings.

4.6 Comparing average scores of the different domains of stroke specific QOL

This section responds to the final study objective which is to compare the mean scores of the different domains of the stroke specific quality of life scale.

Both participants with good and poor quality of life obtained low scores in the social roles and work domain. Poor social roles are in line with findings in a study by Akosile who reported poor scores in the social domain, contrary to the current study the study by Akosile included participants with two months incidence of stroke prior to their data collection. They further suggested that the low scores may be due to participants poor judgement towards themselves when it comes to social interactions or other people's expectations of the patients (22). This may be because stroke

survivors may have difficulties with communication and mobility. The poor scores obtained by participants in the work domain may be due to the fact that majority of the participants in the current study are unable to return to work due to their functional limitations, employer attitude can also influence their return to work. A study by Ntsiea on therapist perception of barriers and enablers of return to work of stroke survivors reported the severity of physical impairment as a barrier and the employers willingness to employ stroke survivors as an enabler for return to work of stroke survivors (29). This findings support results from a study which looked at return to work interventions on stroke survivors in Gauteng province, participants who returned to work were found to have a better QOL as compared to those who did not (32).

In rural areas there is a lot of community gatherings that people attend so if stroke patients are not able to attend such events they may rate their quality of life poorly (50). The low scores obtained in the domain of social roles may also be attributed to the strain in relationships between the stroke survivors and their caregivers (37). There may be a strain between the stroke survivors and the caregivers because responsibility towards the household and the wellbeing of the strong survivors now lies on the caregiver. A study by Hung on factors associated with caregiver strain suggested that the severity of stroke survivors disability to be one of the risk factors of caregiver strain (38).

Low scores were also found in the domains of mobility, upper limb function and family roles domain. Similarly a study by Rangel who assessed the quality of life of stroke patients after rehabilitation reported low scores in these domains, the study by Rangel similarly to the current study excluded participants with aphasia (50). These findings suggest that stroke survivors in this district feel limitation in terms of their functional abilities and also in social participation or social integration.

Both participants who had good quality of life and poor quality of life obtained high scores in the domains of Vision, thinking and language, this results were similar to that of previous studies (22). The high score obtained in language may be due to the exclusion of patients with aphasia from the study. In terms of thinking and language, cognitive impairment in stroke patients depends on the site of the lesion on the brain (10) and the severity of stroke therefore relation to this study cannot be made

because there was no information on the participant's severity of stroke or site of lesion.

In conclusion these results suggest that in Mopani district health promotion campaigns and awareness should be conducted regarding stroke as the socio-demographic data suggests that stroke affects both the young and old people in the district. Rehabilitation should shift more towards empowering stroke survivors with skills such as sewing or arts and crafts and those who were employed before the stroke to be able to return to work in order to enable the stroke survivors to generate their own income and not depend on the disability grant. Community integration should be a priority in rehabilitation as most of the stroke survivors rated their social domain low. It is important to check that after issuing an assistive device to the patient they are able to utilize it effectively. To achieve these, rehabilitation of stroke patients should change from being only about the patient but should include the environment and community as well. The Patients quality of life is an important health outcome and it is important for health systems improvement (70).

4.7 Limitations of the study

The sample of the study was limited to individuals who were getting health services in the public hospitals, which limits generalization to other stroke survivors who are receiving treatment at the primary health care facilities or clients who are so impaired that they cannot come to the hospital. Because the study was conducted in a hospital setting, there may be participant sampling bias because these patients might have a better quality of life than those who are home-bound and cannot come to the hospital. Patients who are able to come to the hospital may also be having the financial, physical and human resources to get to the health facilities unlike those who are at primary healthcare facilities.

There was no specific record of stroke patients. There should be records on the number of stroke patients seen in the public institutions in order to have a definite baseline when conducting further studies on stroke patients.

The patients' files did not indicate the type of stroke and the severity of the stroke, therefore the study was not able to associate the patients' quality of life and the type of stroke or severity of stroke. There results could therefore not be specific in terms of how different types of strokes affect QOL.

The research tools were not translated into to the participant's home language, translating the tool into the patient's home language would allow for better understanding of the questions.

And lastly the study cannot be generalized to the whole population because it was conducted on patients mainly from rural areas and the situation may differ for those from urban areas.

4.8 Conclusion

In summary the overall quality of life of stroke survivors in Mopani district was good. The participants also reported a good perception on their functional ability. Walking was rated as fair and the work and social domains were scored poorly. Future rehabilitation goals should focus on these areas that were scored poorly. As Majority of the stroke survivors are over 60 years support groups may also be beneficial for them.

CHAPTER FIVE: CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter reports on the conclusions that are drawn from the findings of the study looking at all the objectives of the study. Study recommendations are also presented.

5.1 Conclusion

This study findings show that even though majority of the stroke survivors in Mopani district reported to have a good quality of life, there were certain aspect of their lives post stroke which were dissatisfactory. The domains on the stroke specific quality of life scale which were mostly affected were mobility, work, social, family roles and upper limb function. Work, Family and Social domains were reported poor in both participants with poor and good quality of life. The socio-demographic factors which were found to be associated with the quality of life of the stroke survivors were age, gender, marital status and level of education. Overall the study gives light to the challenges experienced by stroke survivors in the district as well as their daily struggles.

5.2 Recommendations for future research

In light of the findings of this study the researcher further makes the following recommendations:

a) More studies should be conducted on the quality of life of patients with stroke in Mopani district to allow for comparisons and also include patients who are receiving service at PHC facilities in order for the results to be generalized to all of Mopani district and in order to get a bigger sample size.
b) To conduct a quality of life study on patients who are house-bound and cannot go to the health facilities.

5.3 Implications for practice.

a. Stroke rehabilitation guidelines specific for the district should be developed to allow for more effective interventions that meets the needs of the stroke patients in the district.

b. The quality of life of stroke patients should be considered during rehabilitation, in terms of them being able to function in their home environments and re-integration back into the community.
c. Training of Caregivers of stroke patients should be included as part of rehabilitation to avoid caregiver strain.
d. Having support groups and activities will be beneficial to stroke survivors who are not of working age.
e. Outreach programmes should be intensified as well as the relationship between public rehabilitation teams and NGO's.

If the above mentioned suggestions are implemented the stroke survivors in Mopani district can live better lives with their disability. The findings in the study will also inform therapists when planning rehabilitation goals for their stroke patients and policy makers of what to include during development of policies on stroke management.

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Appendices

Appendix A: Socio-demographic questionnaire



Demographic Questionnaire

Date of interview | Date / month / year

Identification details

Interviewers full name:

Demographic information

1Age (years) | 2.Gender | 1= male 2= Female

3. Ethnicity

1= Black
2= White
3= Coloured
4= Other

4. Marital Status of Client *(circle appropriate response code)*

1 = Married	*2 = Single*	*3 = Widowed*	*4 = Divorced/ Separated*

5. Client's Highest Education *(circle appropriate response code)*

1 = Primary	*2 = Secondary*	*3 = Tertiary*	*4 = Vocational*	*5 = None*

6. Who is the Client's main caregiver? *(circle appropriate response code)*

1 = Spouse	*2 = Parent*	*3 = Grandparent*	*4 = Brother/Sister*
5 = Son/Daughter	*6 = Other Relative*	*7 = Other*	*8 = Self*

7. Client's Household Main Sources of Livelihood (*Tick and specify all that apply)*

1.Employe	*2.Social Grant*	*3.Remittances*	*4.Petty Trade - Specify:*
5.Self Employed - Specify:	*6.Other – specify*		

1. *When did you have the stroke? (circle appropriate response code)*

1= Less than 1 year
2= 2-5 years
3= More than 5 years

9. Which side of the body is affected? *(circle appropriate response code)*

1= Dominant
2= Non-dominant

Rehabilitation Section

10. Are you attending any rehabilitation? 1= y ☐ ☐ *(tick appropriate box)*

10.1 If yes, please indicate which services *(circle appropriate response code)*

1= physiotherapy
2= occupational therapy
3= speech and audiology
4= other- specify

10.2 If no, please indicate the reason*(circle appropriate response code)*

1= Not referred
2= I was not referred
3= I am not aware of the services
4=other-specify

11. Are you on treatment for any chronic diseases? *(circle appropriate response code)*

1= Hypertension
2= Diabetes
3= Epilepsy
4 = TB
5= HIV
6= Other- specify

12. Do your receive Home-based care services from any other organization?

1 = Yes *Specify :*	*2 = No*

12.1 Skip if participant is not receiving HBC

Please indicate which of the services you have received and the frequency *(Circle number for each relevant service and tick to indicate frequency)*

#	Service	Frequency			
		Weekly	Bi-weekly	Monthly	> Month
1	*Basic care including bathing and dressing*				
2	*Meal preparation & feeding*				
3	*Treatment and prevention of pressure sores*				
4	*Treatment adherence support*				
5	*Light house cleaning*				
6	*Basic body exercises*				
7	*Other (Specify)*				
8	*Other (Specify)*				
9	*Other (Specify)*				

13. Physical and Functional status of the client

13.1 Physical assessment

	Good(independent)	fair (moderate assistance)	Poor(maximum assistance)
Bed mobility			
Walking			
Bathing			
Dressing			
Eating			
Bowel control			
ROM of the unaffected side			
ROM of the affected side			

13.2 Describe how your quality of life has been affected by the stroke.

……
……
……
……
……
……
……
……
……

13.3 How would you like to improve your quality of life?

……
……
……

Appendix B: Stroke Specific Quality Of Life

Williams LS, Weinberger M, Harris LE, Clark DO, Biller J. Development of a stroke-specific quality of life scale. Stroke 1999 Jul; 30 (7):1362-9

Total help - Couldn't do it at all - Strongly agree	1
A lot of help - A lot of trouble - Moderately agree	2
Some help - Some trouble - Neither agree nor disagree	3
A little help - A little trouble - Moderately disagree	4
No help needed - No trouble at all - Strongly disagree	5

Energy

1. I felt tired most of the time. ____
2. I had to stop and rest during the day. ____
3. I was too tired to do what I wanted to do. ____

Family Roles

1. I didn't join in activities just for fun with my family. ____
2. I felt I was a burden to my family. ____
3. My physical condition interfered with my personal life. ___

Language

1. Did you have trouble speaking? For example, get stuck, stutter, stammer, or slur your words? ____
2. Did you have trouble speaking clearly enough to use the telephone? ____
3. Did other people have trouble in understanding what you said? ____
4. Did you have trouble finding the word you wanted to say? ____
5. Did you have to repeat yourself so others could understand you? ____

Mobility

1. Did you have trouble walking? (If patient can't walk, go to question 4 and score questions 2-3 as1.)

____

2. Did you lose your balance when bending over to or reaching for something? ____
3. Did you have trouble climbing stairs? ____

4. Did you have to stop and rest more than you would like when walking or using a wheelchair? ____

5. Did you have trouble with standing? ____

6. Did you have trouble getting out of a chair? ____

Mood

1. I was discouraged about my future. ____
2. I wasn't interested in other people or activities. ____
3. I felt withdrawn from other people. ____
4. I had little confidence in myself. ____
5. I was not interested in food. ____

Personality

1. I was irritable. ____
2. I was inpatient with others. ____
3. My personality has changed. ____

Self Care

1. Did you need help preparing food? ____
2. Did you need help eating? For example, cutting food or preparing food? ____
3. Did you need help getting dressed? For example, putting on socks or shoes, buttoning buttons, or zipping? ____
4. Did you need help taking a bath or a shower? ____
5. Did you need help to use the toilet? ____

Social Roles

1. I didn't go out as often as I would like. ____
2. I did my hobbies and recreation for shorter periods of time than I would like. ____
3. I didn't see as many of my friends as I would like. ____
4. I had sex less often than I would like. ____
5. My physical condition interfered with my social life. ____

Thinking

1. It was hard for me to concentrate. ____
2. I had trouble remembering things. ____
3. I had to write things down to remember them. ____

Upper Extremity Function

1. Did you have trouble writing or typing? ____
2. Did you have trouble putting on socks? ____
3. Did you have trouble buttoning buttons? ____
4. Did you have trouble zipping a zipper? ____
5. Did you have trouble opening a jar? ____

Vision

1. Did you have trouble seeing the television well enough to enjoy a show? ____
2. Did you have trouble reaching things because of poor eyesight? ____
3. Did you have trouble seeing things off to one side? ____

Work/Productivity

1. Did you have trouble doing daily work around the house? ____
2. Did you have trouble finishing jobs that you started? ____
3. Did you have trouble doing the work you used to do? ____

TOTAL SCORE ____

Appendix C: Ethical approval

R14/49 Miss Mmabatho Langa

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)

CLEARANCE CERTIFICATE NO. M160556

NAME: (Principal Investigator)	Miss Mmabatho Langa
DEPARTMENT:	Public Health Mopani District, Limpopo Province
PROJECT TITLE:	Factors Influencing the Quality of Life of Patients with Disability Post Stroke in Mopani District, Limpopo Province
DATE CONSIDERED:	27/05/2016
DECISION:	Approved unconditionally
CONDITIONS:	The investigator has the resposibility to obtain permission from the relevant Provincial Research Committee before any data may be collected
SUPERVISOR:	Fasloen Adams and Motlatso Mlambo
APPROVED BY:	Professor P. Cleaton-Jones, Chairperson, HREC (Medical)
DATE OF APPROVAL:	07/07/2016

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 the conditions under which I am/we are authorised to carry out the above-mentioned research and I/we undertake to ensure compliance with these conditions. Should any departure be contemplated from the research protocol as approved, I/we undertake to resubmit to the Committee. **I agree to submit a yearly progress report**. The date for annual re-certification will be one year after the date of convened meeting where the study was initially reviewed. in this case, the study was initially review in May and will therefore be due in the month of May each year.

M G Langa
Principal Investigator Signature

12/07/2016
Date

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES

Appendix D: Approval from Limpopo Dept Of Health

LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF HEALTH

Enquiries: Latif Shamila (015 293 6650) Ref:4/2/2

Mmabatho Langa
Human Research Ethics Committee
University of Witwatersrand

Greetings,

RE: Factors influencing the Quality of life of patients with disability post stroke in Mopani District, Limpopo Province.

The above matter refers.

1. Permission to conduct the above mentioned study is hereby granted.
2. Kindly be informed that:-
   - Research must be loaded on the NHRD site (http://nhrd.hst.org.za) by the researcher.
   - Further arrangement should be made with the targeted institutions, after consultation with the District Executive Manager.
   - In the course of your study there should be no action that disrupts the services.
   - After completion of the study, it is mandatory that the findings should be submitted to the Department to serve as a resource.
   - The researcher should be prepared to assist in the interpretation and implementation of the study recommendation where possible.
   - The above approval is valid for a 3 year period.
   - If the proposal has been amended, a new approval should be sought from the Department of Health.
   - Kindly note, that the Department can withdraw the approval at any time.

Your cooperation will be highly appreciated.

Head of Department

31/08/2016
Date

18 College Street, Polokwane, 0700, Private Bag x9302, POLOLKWANE, 0700
Tel: (015) 293 6000, Fax: (015) 293 6211/20 Website: http/www.limpopo.gov.za

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Appendix E : CEO Approval Letter

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LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF HEALTH
KGAPANE HOSPITAL

Private Bag X 742
Ga-Kgapane
0838
Tel: 015 328 7801/5
Fax: 015 328 4248

Ref : S5/2/3
Enq : SELOISA ML
Date : 09/11/2016
Tel : 015 328 7802
Fax : 015 328 4248

To : MMABATHO LANGA
HUMAN RESOURCE ETHICS COMMITTEE
UNIVERSITY OF WITWATERSRAND

RE: FACTORS INFLUENCING THE QUALITY OF LIFE OF PATIENTS WITH DISABILITY POST STROKE IN MOPANI DISTRICT, KGAPANE HOSPITAL, LIMPOPO

1. The above matter refers
2. The Chief Executive Officer (CEO) has permitted you to come and conduct the research as stipulated above in Kgapane Hospital
3. Kindly be informed that:
   - Research must be loaded on the NHRD site (http://nhrd.hst.org.za) by the researcher
   - Further arrangement should be made with the target institutions.
   - In the course of your study there should be no action that disrupts the services..,
   - After completion of the study, it is mandatory that the findings should be submitted to the Department to serve as a resource.
   - The researcher should be prepared to assist in the interpretation and implementation of the study recommendation where possible.
   - The above approval is valid for a three year period.
   - If the proposal has been amended, new approval should be sought from the Department of Health.
   - Kindly note, that the Department can withdraw the approval at any time.

Regards

PP Sellumpah
Acting Chief Executive Officer

09/11/2016
Date

CONFIDENTIAL

LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DR CN PHATUDI HOSPITAL
PRIVATE BAG X 4056
TZANEEN
0850

Ref: S5/2/3
Enq: TLOU M.F
Date: 2016/10/19
Tel: 015 355 8043
Fax: 015 355 3434

TO: MMABATHO LANGA
HUMAN RESEARCH ETHICS COMMITTEE
UNIVERSITY OF WITWATERSRAND

RE: FACTORS INFLUENCING THE QUALITY OF LIFE OF PATIENTS WITH DISABILITY POST STROKE IN MOPANI DISTRICT, DR CN PHATUDI HOSPITAL, LIMPOPO.

1. The above matter refers.
2. The Chief Executive Officer (CEO) has permitted you to come and conduct the research as stipulated above in DR CN Phatudi Hospital.
3 Kindly be informed that:
   - Research must be loaded on the NHRD site (http://nhrd.hst.org.za) by the researcher
   - Further arrangement should be made with the targeted institutions.
   - In the course of your study there should be no action that disrupts the services.
   - After completion of the study, it is mandatory that the findings should be submitted to the Department to serve as a resource.
   - The researcher should be prepared to assist in the interpretation and implementation of the study recommendation where possible
   - The above approval is valid for a three year period.
   - If the proposal has been amended, new approval should be sought from the Department of Health
   - Kindly note, that the Department can withdraw the approval at any time.

Regards

.....
Chief Executive Officer
MAVUNDZA M.M

19/10/2016
DATE

CONFIDENTIAL

LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF HEALTH
MOPANI DISTRICT
LETABA HOSPITAL

Ref No: 9/2/3

From: Acting Quality Manager

Date: 28 September 2016

To: Mmabatho Langa

University: University of Witwatersrand

Student No: 366473

SUBJECT: APPROVAL FOR CONDUCTING RESEARCH TITLED: FACTORS INFLUENCING THE QUALITY OF LIFE OF PATIENTS WITH DISABILITY POST STROKE IN MOPANI DISRICT, LIMPOPO

1. The above subject matter refers.
2. You are granted permission to conduct research at Letaba Hospital as per permission granted by the Head of Department, Limpopo Department of Health.
3. Hoping that you will find this to be in order.

CHIEF EXECUTIVE OFFICER

2016/10/07
DATE

Private Bag X 1430, LETABA, 0870
Cnr Tarentaal and Lydenburg Road, Tel. (015) 303 8200, Fax no 015 303 8421

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DEPARTMENT OF HEALTH
SEKORORO DISTRICT HOSPITAL

LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF HEALTH AND SOCIAL DEVELOPMENT

VAN VELDEN MEMORIAL HOSPITAL

Private Bag X 4014, Tzaneen 0850

Tel: 015 307 8800

Fax: 015 307 3512

From: The CEO Van Velden Hospital

Date: 17/ 10/2016

To: Mmabatho Langa

University: University Of The Witwatersrand

Student Nr: 366473

SUBJECT: Approval for conducting research study titled: Factors influencing the quality of life of patients with disability post stroke in Mopani District, Limpopo Province.

1. The above subject matter refers.
2. You are granted permission to conduct research at Van Velden Hospital as per permission granted by the Head of Department, Limpopo Department of Health.
3. Hoping that you will find this to be in order.

CHIEF EXECUTIVE OFFICER

VAN VELDEN HOSPITAL
P/BAG X4014 TZANEEN 0850
DATE 17-11-22
CEO

Appendix F: Consent Form



INFORMED CONSENT

I agree to participate in the study entitled: Factors influencing the quality of life of patients with disability post stroke in Mopani district, Limpopo as outlined in the information sheet.

The goals, methods and the purpose of the study have been explained to me and are clear. I understand that the study will involve answering questions from a questionnaire that are asked by the researcher and I understand that I have the right to refuse participation in the study.

I agree to participate in the study on condition that:

1. I can withdraw from the study at anytime voluntarily and that no adverse consequences will follow on withdrawal from the study.
2. I reserve the right not to answer any/or all questions posed in the survey.
3. The Human Research Ethics Committee at the University of the Witwatersrand has approved the study protocol and procedures.
4. My name will not appear anywhere on this interview guide. All results will be treated with the strictest confidentiality.
5. Only group results, and not individual results, will be published in the final report, scientific journals and in any presentation related to this study
6. The Researcher is committed to treating participants with respect and privacy throughout the procedure.

I, …….. herewith confirm that I have been fully informed about the nature, conduct and benefits (service delivery improvement) of the study, entitled: Factors influencing the quality of life of patients with disability post stroke in

Mopani district, Limpopo outlined in the information sheet. I agree to participate in the above-mentioned study.

RESEARCHER

Printed Name Signature/Mark or Thumbprint

Date and Time

PARTICIPANT

Signature/Mark or Thumbprint Date and Time

Appendix G: Information sheet



INFORMATION SHEET

Good Day,

My name is _____.I am an MPH student from WITS,I am conducting a study, which seeks to explore patients', (like yourselves) perceptions of their quality of life . I would like to invite you to participate in this a study in order to understand the factors that influence the quality of life of stroke patients. This study is conducted in order to meet the requirements of an MPH. We would be most grateful if you would agree to participate in this study.

What do we expect from the participants in the study?

You will be asked questions from a questionnaire, this questions are about your disability and how it affects your everyday life. For example you will be asked to describe how your quality of life has been affected by the stroke. You will only be asked to answer the questionnaire once and there is no follow-up interview. The questionnaire will not take more than 15 minutes to complete and the interview will take place in a private space with the interviewer.

Are there benefits to the participants? There are no benefits.

May I withdraw from the study? Certainly, you may do this at any time without having to give a reason. Your responses will be confidential and you will not be victimized in any way

by not participating or by withdrawing from the study, that is, your treatment for future hospital visits will not be affected. In addition, should you experience any physical, emotional or psychiatric discomforts that require counselling or psychiatric intervention, you will be re-referred to the clinic.

What about confidentiality? Confidentiality will be maintained at all times. No names are required at any stage during the research. At the top of the interview guide, which only the researcher and myself will have access to, will be a study number to help us order and identify the interview but this will not be linked back to you as the participant. They will be kept in the researcher's locker that will be locked at all times. In addition, the findings will be reported as group and not individual results, in order to protect any identifying information.

If you have any queries, more information may be obtained from me on this telephone number 0834521966

In the event of ethical concerns please contact

Chairperson HREC(Medical)

Email: Peter.cleaton-jones1@wits.ac.za

Administrators – Ms Zanele Ndlovu/ Mr Rhulani Mkansi/Mr Lebo Moeng

Tel 011 717 2700/2656/1234/1252

Email: HREC-Medical.ResearchOffice@wits.ac.za

Should you wish to participate, please read and sign the attached consent form and complete the questionnaire and return it to the assistant who will be receiving the questionnaires.

Thank you

Langa Mmabatho

Appendix H: District approval letter

LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF HEALTH
MOPANI DISTRICT

Ref: S7/7/3

Enq: Mohatli I.E

Tel: 015 811 6543

To: **Mmabatho langa**
Human Research Ethics Committee
University of Witwatersrand

Re: Factors influencing the quality of life of patients with disability post stroke in Mopani District, Limpopo

The above matter refers:

1. Permission to conduct the above mentioned study is hereby granted by the District Executive Manager.
2. Kindly be informed that:
    - Research must be loaded on the NHRD site (http://nhrd.hst.org.za) by the researcher.
    - Further arrangement should be made with the targeted institutions.
    - In the course of your study there should be no action that disrupts the services.
    - After completion of the study, it is mandatory that the findings should be submitted to the Department to serve as a resource.
    - The researcher should be prepared to assist in the interpretation and implementation of the study recommendation where possible.
    - The above approval is valid for a 3 year period.
    - If the proposal has been amended, new approval should be sought from the Department of Health
    - Kindly note, that the Department can withdraw the approval at any time.

Your cooperation will be highly appreciated

DIRECTOR: CORPORATE SERVICES
DATE: 25/09/22