EXPERIENCES AND COPING STRATEGIES 3 MONTHS POST-STROKE OF PATIENTS IN HARARE AND CHITUNGWIZA: 3 MONTHS FOLLOW-UP PROSPECTIVE STUDY

BY

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ABSTRACT

**Background and purpose:** Problems encountered by survivors of stroke need to be adequately addressed to promote the individual’s well being. In Zimbabwe it is not known to what extent survivors of stroke are affected by disability resulting from stroke and whether the current services are adequate to address the challenges faced. There is also scarcity of documented information on coping methods used by victims of stroke. Therefore the main aim of the study was to determine experiences of a patient suffering from stroke in Harare and Chitungwiza three months post-stroke and how they cope with the challenges that they encounter.

**Methodology:** A cross-sectional study design was used to carry out this study. Eighty (80) patients with a clinical diagnosis of stroke were conveniently recruited from Parirenyatwa, Harare and Chitungwiza Central Hospitals. Baseline information of participants was collected during recruitment and follow-up was done at 3 months. An interviewer administered questionnaire was used to obtain information from participants.

**Results:** The occurrence of stroke during the period under review at the three hospitals was higher in females (N = 56, 70%) than males (N = 24, 30%) ratio 2.3:1. The mean age of the participants was 60.6 years (SD 17.1). Thirty eight (47%) participants were found at follow-up, 27 (34%) had died and 15 (19%) were lost to follow-up. Physical problems e.g. mobility were common soon after stroke onset while psychosocial problems e.g traditional roles were more common at 3 months post-stroke. Family assistance, acceptance, changes in family roles and prayer helped most participants to cope with devastating effects of stroke.

**Conclusion and recommendations:** Stroke can result in high fatalities. Health care team needs to focus on both the physical and psychosocial problems faced by a stroke survivor.
DECLARATION

I hereby declare that, except for references to other people’s works, opinions and observations which have been duly acknowledged, this study is the result of my own original research. I hereby declare that this study has neither in whole nor part been presented for a degree elsewhere.

..........................................................

JULIAH MARIJENI (MASOCHA)

STUDENT
DEDICATION

This piece of work is dedicated to my husband Artiwel Masocha who allowed me to pursue further studies in physiotherapy and taking over my wifely responsibilities for such a prolonged period of time. I also dedicate this piece of work to my three beautiful obedient children Brenda, Brita and Walter for their encouragement and diligent support during times of stress.
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First I want to give thanks to God for his unconditional love for me and guidance throughout the whole programme. I wish to acknowledge all lecturers and staff of the Department of Rehabilitation and Department of Community Medicine for the role each one of them played in making this project a success. My special thanks go to Mrs Kaseke my project supervisor for her patience, encouragement and support and all the advice she gave me throughout the execution of this project.

I would also want to thank the Chief Executive Officers of Parirenyatwa Group of Hospitals, Harare and Chitungwiza Central hospitals for granting me permission to use their institutions for this study. I am also grateful to all sisters’ in-charge and physiotherapy staff of the aforementioned hospitals for assisting with identification of participants. I would also like to acknowledge my colleagues Dunmore and Paul for their continuous support and Ms Joyce Tome the biostatistician for helping with the analysis of the results of the study.

Special thanks also go to Augustine and Mavis Angeline Madongonda for their selfless support and encouragement especially during times of stress and for providing a roof over my head throughout my studies.
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CHAPTER 1

1.1 Background and Need

Cerebro-vascular disease comprises disorders in which there is a disturbance of blood supply to the brain (Senes 2006). A stroke occurs when an artery supplying blood to a part of the brain suddenly becomes blocked (ischaemic stroke) or bleeds (haemorrhagic stroke) (Senes 2006). This causes loss of function of part of the brain and may affect functions including movement of body parts, vision, swallowing and communication, and may lead to death (Senes 2006). Stroke mainly affects older people in the Western world and the rate of stroke occurrence increases markedly with age from about 65 years (Senes 2006).

Stroke is a common devastating non-communicable disease that results in severe, moderate or mild impairments, activity limitations and participation restrictions. This can incapacitate survivors physically, mentally, psychologically, socially and economically and subsequently increase the burden on both the survivor of stroke and the caregiver. Impairments which may result from stroke include weakness of the affected side, sensory disturbances, perceptual and psychological to name a few. Physical limitations encountered are a result of impaired motor function. Survivors of stroke can be limited in mobility which may be in all areas depending on severity and site of stroke. Some patients suffering from stroke face communication difficulties which include aphasia. Kauhanen (2000) in his study on quality of life after stroke reported that patients with severe aphasia had more severe impairment and handicap and were more dependent in activities of daily living.

Psychological problems faced include depression which negatively affects their social function. The researcher has come across patients who stopped leisure activities and even
contemplated stopping work because they did not want to face the public. Kauhanen (2000) also found that following stroke, patients suffer from depression at 3 months and the frequency of major depression seems to increase over time, especially among the aphaic patients. Problems reported by Ostwald (2008) included decreased self esteem, self efficacy, reduced opportunities for personal growth and reduced ability to engage in positive social relationships.

Reduction or total loss of sexual desire and satisfaction after stroke was reported in Nauert’s study on psychosocial issues of stroke (2009). From the same study survivors of stroke reported that they were unable to continue their traditional male or female roles after stroke and this challenged their self-perception and identity. Often there are required adjustments to role changes, financial impacts, and changes to household structures and routines (Newell et al, 2009). The quality of life of the patients was reported by Newel et al to be low at 3 months after stroke. Donnan et al (2008) reported that stroke can have a profound impact on activities of daily living, emotions, cognition, and participation in social activities, thus significantly compromising survivor well-being and inevitable alteration in quality of life. Main difficulties with activities of daily living (ADL) are dressing, use of the toilet and personal hygiene (Vincent et al 2007).

Problems encountered by patients suffering from stroke need to be adequately addressed to promote the individual’s well being. Services offered in Zimbabwe to assist people with stroke include stroke clinics which offer Physiotherapy, Occupational Therapy and to a small extend communication therapy and these clinics are mostly found in central hospitals; Community Based Rehabilitation (not currently on full scale) and medical wards. There are also few rehabilitation centres such as Ruwa National and St Giles rehabilitation centres
which cater for both acute and chronic patients with neurological conditions. These programmes are not specific to victims of stroke alone. However it is not known if enough is being done to address the challenges encountered due to lack of documented information on the extent to which disability resulting from stroke affects the survivors of stroke. Little is also documented concerning how this group of people cope with challenges experienced. The study was therefore aimed at establishing subjective information on experiences and coping strategies of survivors of stroke three months after onset.

1.2 Statement of the problem

Stroke is one of the leading causes of morbidity, mortality (second to HIV in Zimbabwe) and disability worldwide (WHO 2011). The major problem resulting from stroke is loss of independence which subsequently leads to alteration in the quality of life. The challenges encountered from stroke which include psychosocial or cognition challenges may result in non-compliance as well as learning difficulties which interfere with the individual’s speed of recovery thereby placing a burden on carers or family. The individual may have increased financial burden to meet medical costs, increased dependence on caregivers and decrease in their capacity to participate fully in social activities. The major problem in Zimbabwe is that it is not known to what extent survivors of stroke are affected by disability resulting from stroke and whether the current services are adequately addressing the challenges faced. There are few available programmes that are evident to show that we do not know nearly enough about the experiences of survivors of stroke and that the condition has not been fully recognized as a major public health concern. In Zimbabwe there is also scarcity of documented information on how survivors of stroke cope with disability resulting from the condition.
1.3 Research questions

1. What are the experiences of patients suffering from stroke at three months?

2. How do patients with stroke cope with challenges encountered?

1.4 Broad objective of the study

To determine the experiences of patients suffering from stroke in Harare and Chitungwiza three months post-stroke.

1.4.1 Specific objectives:

To determine who is affected by stroke in Harare and Chitungwiza.

To determine the challenges faced by patients with stroke at three months post-stroke in Harare and Chitungwiza.

To determine differences in challenges during the acute phase and at three months post-stroke.

To describe the functional status of patients with stroke three months post-stroke.

To describe how patients coped with their disability the first three months following stroke.

1.5 Significance of the study
The study on experiences of patients with stroke was aimed to assist with an in-depth understanding of challenges and experiences that are encountered from disability resulting from stroke. This information would be used by health practitioners and policy makers in planning appropriate programmes for people living with stroke and prioritising resource allocation. The study would facilitate implementation of health promotion programmes for victims of stroke for example formation of peer support groups or associations for persons living with stroke.

The findings of the study will enable the health practitioners to review their management approaches when managing patients with stroke to promote appropriate interventions depending on needs of the individual. Absence of fully addressing the longer-term issues arising from residual disabilities post-stroke may result in survivors of stroke regressing to a lower level of function and this can in turn precipitate further crisis and lead to loss of physical ability, increases anxiety, distress and burn-out in the carers (Thompson et al 2009). Currently some services like for example counselling are not routinely considered for people with stroke but could be of great benefit to the individual, spouse or caregivers to help them come to terms with the devastating effects of stroke. Appropriate and adequate management of the person with stroke will subsequently lead to increase in coping skills hence lessening the burden on the individual, family, reduction in public costs and improvement in quality of life. The study will also provide valuable information which can be taken into consideration in audits of clinical practice. A research of this kind is thus not only timely but also necessary to provide more insight into some aspects of survivors of stroke problems and to provide the basis for further studies and appropriate intervention.

CHAPTER 2- LITERATURE REVIEW
2.1 Introduction

The literature includes the general overview of stroke and some aspects of stroke which are: global epidemiology of stroke, risk factors of stroke and impact of/ challenges of stroke. Also included in the literature is a review of methods of coping after an attack by stroke. Owing to scarcity of literature from Zimbabwe the investigator used mostly studies from other countries. Sources of literature were obtained from Google Scholar, Hinari and Medline Search.

2.2 Overview of stroke

Stroke was defined 2 400 years ago by father of Medicine Hippocrates as sudden onset of paralysis and in ancient times stroke was called apoplexy a term that was applied to anyone suddenly struck down with paralysis (National Institute of Neurological Disorders and Stroke- NINDS 2004). Ibrahim et al (2011) defined stroke as a sudden onset of focal or generalised neurological deficit due to vascular lesion. Many researchers adopted the WHO definition of stroke which means rapidly developing clinical signs of focal (sometimes global) disturbance of cerebral function which can be temporary or permanent, lasting more than 24 hours or leading to death with no apparent cause other than that of vascular origin (Ogunrin 2007). As a result the affected area of the brain cannot function which may result in a wide variety of symptoms, including an inability to move one or more limbs on one side of the body (Donnan et al 2008).

2.2.1 Types and pathophysiology of stroke
There are two major types of stroke: ischemic and hemorrhagic. Ischemic strokes are those that are caused by interruption of the blood supply. Thrombotic cerebral infarction results from the atherosclerotic obstruction of large cervical and cerebral arteries, with ischemia in all or part of the territory of the occluded artery. This can be due to occlusion at the site of the main atherosclerotic lesion or to embolism from this site to more distal cerebral arteries (Truelsen et al 2006).

Hemorrhagic strokes are the ones which result from rupture of a blood vessel or an abnormal vascular structure. They are mainly due to arteriolar hypertensive disease, and more rarely due to coagulation disorders, vascular malformation within the brain, and diet (such as high alcohol consumption, low blood cholesterol concentration, high blood pressure, etc.) (Truelsen et al 2006). When the blood supply is disrupted, brain cells are deprived of oxygen and nutrients, some are damaged and others die. The site and extent of this damage within the brain determines whether the stroke is fatal or causes permanent or temporary disabilities (Carroll 2001 et al).

About 87% of strokes are caused by ischemia and the remainder by haemorrhage (Donnan et al 2008, NINDS 2004) reported that it accounts for 80% of all strokes and haemorrhagic 20%. Antonio et al (2007) also reported 74.7% ischaemic stroke compared to 17.7% haemorrhagic in a study carried out in Brazil, Mallory (2006) reported 88% ischemic and 12% haemorrhagic. Researchers generally came to the same conclusion that ischaemic stroke type is more common than the haemorrhagic type. In an ischemic stroke, blood supply to part of the brain is decreased, leading to dysfunction of the brain tissue in that area (Deb et al 2010). Brain tissue ceases to function if deprived of oxygen for more than 60
to 90 seconds and after approximately three hours, will suffer irreversible injury possibly leading to death of the tissue, i.e. infarction.

Intracranial haemorrhage is the accumulation of blood anywhere within the skull vault. Hemorrhagic strokes result in tissue injury by causing compression of tissue from an expanding hematoma or hematomas. This can distort and incur and cause injury to the brain tissue. In addition, the pressure may lead to a loss of blood supply to affected tissue with resulting infarction, and the blood released by brain haemorrhage appears to have direct toxic effects on brain tissue and vasculature (Michael-Titus, 2007).

Stroke can be classified into stroke in evolution, completed stroke and transient-ischaemic attack. A complete stroke implies a neurological deficit which has reached its maximum extent and neurological deficits do not increase further, usually within less than six hours of the onset. Stroke in evolution describes evolving and deteriorating symptoms and signs which occur 24-48 hours from the onset suggesting an ongoing infarct (Smith et al 2005). Transient ischemic attack (TIA) denotes a focal deficit, such as lasting from a few seconds to 24 hours followed by complete recovery. In many cases, TIAs may be caused by an unstable clot that could create a more permanent blockage within the brain's blood supply at any moment. A transient ischemic attack (TIA) or mini-stroke has symptoms (weak limb, aphasia or loss of vision) similar to those of a full-blown stroke but resolve within 24 hours, typically in less than one hour (Smith et al 2005). The short-lived nature of TIAs does not mean that they leave the brain unharmed. Even when there is no sign of brain infarction, a TIA is both a warning and an opportunity for intervention. While someone who has experienced a full-blown stroke has a two to seven percent (7%) risk of having another stroke within the next 90 days; the 90-day risk of stroke following a TIA is 10 to 20 percent (Smith et al 2005).
2.2.2 Symptoms and signs of stroke

The exact symptoms depend on where in the brain’s vascular system the blockage or rupture has occurred. They manifest themselves rapidly and include one or more of the following:

Motor impairments (weakness or paralysis of parts of the body, including the face; on one or both sides or trouble with walking);
Sensory impairments (touch, pain, warm/cold), most often on one side;
Speech difficulties or slurred speech;
Vision difficulties (sudden loss of vision, blurred vision), most often on one side;
Dizziness, loss of balance or unexplained falls;
Sudden severe headache or difficulty swallowing (Senes 2006).
Sudden confusion

2.2.3 Complications of stroke

Complications resulting from stroke can be divided into neurological or medical. Neurological complications include cerebral edema, hydrocephalus, increased intracranial pressure, hemorrhagic transformation, seizures. Cerebral edema and increased intracranial pressure, which can lead to herniation or brain, stem compression. Death during the first week after stroke is commonly caused by brain edema and an elevated intracranial pressure. Medical complications include aspiration, hypoventilation, pneumonia, myocardial ischemia, cardiac arrhythmias, deep vein thrombosis, pulmonary embolism, urinary tract infections, decubitus ulcers, malnutrition, contractures and stiff joints (Indredavik et al 2008, Teasell et al 2011). Teasell et al (2011 update) also included osteoporosis as a late complication.
In their study in Dallas Texas Indredavik et al (2008) reported that the most common complications during the first week were pain, followed by fever, progressing stroke and urinary tract infections. Pain was the most frequent complication (53.3%). Common complications after 3 months of stroke onset were found to include nonserious falls, chest infections, shoulder pain, acute myocardial infarction, stroke recurrence and rarely pressure sores and pulmonary embolism were also reported from the same study by Indredavik et al (2008).

2.2.4 Outcome of stroke

Outcome after stroke is crucially dependent on the extent and site of the brain damage, as well as the patient’s age and pre-stroke health status (Davenport et al 2000). Stroke patients are at highest risk of death in the first weeks after the event, and between 20% to 50% die within the first month depending on type, severity, age, comorbidity and effectiveness of treatment of complications (Truelsen et al 2006). Case fatality rates after a first ever stroke (all types combined) are 12% at 7 days and 19% at 30 days; haemorrhagic stroke carries a higher risk of death than ischaemic stroke (Davenport 2000). Grau et al (2001) reported that mortality within 90 days amounted to 14.7% while Scottish Intercollegiate Guidelines Network (November 2002) approximated mortality within 30 days to be as high as 20% in Scotland while Sturm et al (2002) reported that 27% died within 3 months.

Deaths occurring within the first week after stroke are mostly due to the direct effects of cerebral damage; later on, the complications of immobility (for example, bronchopneumonia, venous thrombo-embolism) and cardiac events become increasingly common (Davenport et al 2000). In Sturm et al’s study 32% of the participants indicated that they had made a complete recovery after 3 months post-stroke while 68% had not. About
20% of stroke patients will depend on other people for everyday activities for example bathing, washing, dressing or mobility following stroke (Davenport et al 2000).

2.3 Epidemiology of stroke

According to WHO (2007) 15 million people suffer stroke worldwide each year and of these 5 million die, 5 million survive and 5 million are permanently disabled. Stroke is currently the second leading cause of death in the western world, ranking after heart disease and before cancer (Donnan et al 2008). In Australia in 2003 almost 7% of all deaths were caused by stroke (Senes 2006). Ten percent (10%) of deaths worldwide and 3% of deaths in Africa are due to stroke (WHO 2004). Truelsen et al (2006) also reported that two-thirds of these deaths occurred in people living in developing countries and 40% of the subjects were aged less than 70 years. In the United States stroke was reported as the third cause of death (American Heart Association update 2010, Mallory 2006). Interstroke phase 1 study 2007-2009 reported that 5.7 million deaths in 2005 were due to stroke and the number is projected to rise to 7.8 million by 2030 and 87% of these in low or middle income countries. According to the same study stroke was reported to be the leading cause of adult disability in most regions. A third to one half of those who survive stroke are disabled and require some form of care (Michael-Titus 2007). Mallory (2006) also reported that stroke is the leading cause of disability in the United States and that 15–30% of stroke survivors remain permanently disabled.

NINDS (2004) reported that after the age of 55 the risk of stroke doubles and two thirds of all strokes occur in people over the age of 65 and that people over the age of 65 have a seven-fold greater risk of dying from stroke than the general population. In Australia the median age of patients having a stroke is about 79 years (Senes 2006). According to 2010
update report by American Heart Association, the male’s stroke incidence rates are greater than women’s at younger ages (1:50 in the ages 65-74 and 0:76 in ages 85 or greater) in United States. Petrea et al (2009) reported that stroke incidence increased with each decade of life in both women and men and, among those aged 45 to 84 stroke incidence was higher in men than in women. They also reported that gender effect reversed in the oldest group in which stroke incidence was found to be higher in women than in men among those aged 85 to 94. Carroll et al (2001) reported that over 80 per cent of strokes occurred in people over 64 years of age in England also that first ever strokes were strongly associated with age.

In Ghana mean age of stroke patients was 63.68 years and male to female ratio was 1:0.96 (Attah – Adjepong 2008). In Zimbabwe mean age of stroke was found to be 52 (Matenga et al 1986). In Sudan mean age was found to be 56.61 (Ibrahim et al 2011). In Ghana stroke was found to be common among those aged between 66 and 75 (Atta-Adjepong, 2008) and in the same study more men than women were affected. In Brazil the mean age was found to be 64.1 (Antonio et al 2007). In less developed regions, the average age of stroke will be younger due to the different population age structure resulting from higher mortality rates and competing causes of death (Truelsen et al 2006) The general trend from the reviewed studies showed that the majority of those affected by stroke in the developing countries belong to the active segment of the population.

2.4 Risk Factors:
Extensive research into this area has shown that many factors are associated with an increased risk of stroke. Risk factors for stroke may be classified as modifiable and non-modifiable.

2.4.1 Non-modifiable factors

Non-modifiable risk factors of stroke include advanced age, male gender, ethnicity, and hereditary syndromes (Mallory 2006). In a report by NNIDS (2004), men have a higher risk for stroke (1.25 times) but more women die from stroke probably because women are older on average when they have their stroke. From the same report it was also reported that stroke risk factors varies among ethnic and racial groups where incidence of stroke and death rates from stroke was found to be higher in African-Americans than White Americans partly because blacks are more at risk for high blood pressure, diabetes, and obesity. Women who are pregnant have a higher risk of stroke, as do women taking birth control pills that also smoke or have high blood pressure or other risk factors (Mallory 2006). In a study by Martins et al (2007) they also reported older age, male gender, and previous personal and family history of stroke as common risk factors for stroke. Heredity and race were found to be risk factors for stroke. Stroke risk is greater if a parent, grandparent, sister, or brother has had a stroke (Mallory 2006). Prior stroke or heart attack exposes an individual to stroke attack (Mallory 2006).

2.4.2 Modifiable risk factors

These include hypertension, diabetes mellitus, dyslipidemia, smoking, obesity, alcohol abuse, physical inactivity, and atrial fibrillation (Goldstein et al 2006). These findings were consistent with a study carried out in Sudan among Sudanese women between 2006 and
2008 where diabetes, hypertension, hyperlipidemia, recurrent stroke, past history of DVT, hypothyroidism, ischaemic heart disease, a past history of taking contraceptive pills and smoking were also risk factors (Ibrahim et al 2011). Raju et al (2010) also found hypertension, dyslipidemia, diabetes mellitus, coronary heart disease, smoking, atrial fibrillation and alcohol to be common risk factors in India. In England and Wales Carroll et al (2001) also reported an increased risk of stroke in patients with atrial fibrillation, diabetes, heart failure, ischaemic heart disease, hypertension and smoking.

In a study by Matenga et al (1986) in Zimbabwe, hypertension was found in 53% of the participants. In rural South Africa Connor and Bryer (2005) found 71% and in Ghana it was found to be 87% (Attah – Adjepong 2008). Martins et al (2007) also found hypertension as a major risk factor (67.6% and 57.8% respectively) in both ischaemic and haemorrhagic stroke in their study on frequency of types of stroke in Natal Brazil. Chronic infection with streptococcal pneumonia was reputed as a risk factor for ischemic stroke in Cameroon by Njumnshi et al (2006). Dyslipidemia was reported as a risk factor among stroke patients in South Africa, Burkina Faso and Nigeria by Connor et al (2005).

Other modifiable risk factors include heavy alcohol consumption, neuro-syphilis, homozygous sickle cell disease (in children), obesity, anemia, dehydration, infection (including HIV infection), under nutrition and congestive heart failure as reported by Amu et al (2005). Self-reported weekly stress and high stress intensity were significantly associated with an increased risk of fatal stroke (Truelsen et al 2003). Other findings were that previous stroke, diabetes and smoking were more common among men and hypertension and atrial fibrillation more common among women (Glader et al, Roquer et al 2003) while Petrea et al (2003) reported no differences in comorbidities in their cohort study on gender differences.
in stroke disability. Case fatality ratios during the first 3 months were however found to be similar in men and women Glader et al (2003).

From the literature it shows that the most common risk factors of stroke are modifiable and it was recommended that if non-communicable conditions are given the same attention as communicable diseases the incidence of those who succumb to stroke may be significantly reduced. However researchers were not consistent in reviewed literature on Non-modifiable risk factors.

2.5 Impact of Stroke

Cerebro-vascular disease is the leading cause of disability in adults and each year millions of stroke survivors have to adapt to a life with restrictions in activities of daily living as a consequence of cerebro-vascular disease Truelsen et al (2006). Many surviving stroke patients will often depend on other people’s continuous support to survive (Truelsen et al 2006). Disability following stroke appears in form of neurological dysfunctions (e.g. motor, sensory, visual) (Iburahim 2011) and limited ability to perform activities of daily living (Geyh 2004), as well as neuropsychological deficits (e.g. attention, memory, language) (Kase et al 2003). Kase et al (2003) went on to report that neuropsychiatric disturbances e.g. post-stroke depression is frequently associated with stroke. In Australia 42% of disability is due to stroke (Senes 2006). The most common types of disability resulting from stroke were restriction in physical activities, incomplete use of limbs, difficulty gripping or holding things and speech difficulties (Senes 2006). The effects of stroke depend on which part of the brain is damaged and extend of the damage (Michael-Titus 2007).

2.6 International Classification of Disability functioning (ICF) and stroke
Mont (2006) described ICF as a framework for describing the facets of human functioning that may be affected by a health condition developed by the World Health Organization (WHO) (2001). Body function and structures, activities and participation are the ICF domains. Body functioning describes the physiological and psychological function of body systems e.g. speech, pain, muscle strength while activities and participation describes individual’s functioning as a whole person, as opposed to function and structure of his/her body parts. Dahl (2002) further described activity as the execution of a task or action by an individual and participation as involvement in a life situation. World Health Organization (2001) describes activities as what people can do inherently without assistance or barriers e.g. walking and participation as functioning taking into account the impact of barriers and facilitators in the environment. Examples in activities and participation include dressing, eating, and bathing and other complex activities which include work, schooling, civic activities Mont (2006). All aspects of patients’ everyday activities and involvement in life situations are represented in the ICF showing that stroke inserts an overall effect on patients’ lives. The areas that are covered represent key issues for patients with stroke, including mobility, self-care, communication, and learning things (Geyh et al 2004).

2.6.1 Impairments resulting from stroke

Quality of life was reported to be low at 3 months post-stroke and the test domains most often impaired were physical functioning, physical role limitations, vitality and general health (Kauhanen 2000). Physical functioning included challenges in communication by majority of stroke patients (Khaunen 2000). Frequent communication limitations in stroke include aphasia and dysarthria as reported in Scottish Intercollegiate Guidelines Network (2002). A third of patients with stroke experience aphasia and 70% of them are still apha...
at 3 months (Kauhanen 2000). There may be permanent paralysis of one side of the body, speech or swallowing difficulties, problems with memory, personality changes and depression, anxiety and cognitive impairment are also common after stroke (Senes 2006).

Other common impairments encountered included epileptic seizures, balance problems, urinary incontinence, general body pains or shoulder pain, confusion, recurrent stroke and other infections SIGN (Scottish Intercollegiate Guidelines Network) 2002. Arm/hand/leg weakness, homonymous visual field defect, facial weakness, sensory loss (proprioception), sensory loss (spinothalamic), cognitive impairment, dysarthria, visuospatial dysfunction, aphasia were also other impairments which may result from stroke (SIGN 2002). A study by Harnez et al 2011 showed that people whose stroke was due to intracerebral haemorrhage, on average, had a worse prognosis (impairment) than those with an intracerebral infarction.

Post-stroke fatigue was reported to be a common problem among stroke survivors by Truelsen et al (2003). Fatigue in stroke patients was found to be common in physical, psychological and social functioning Jaracz (2007). This was consistent with Thompson et al study (2009) in which post-stroke fatigue was identified as an obstacle that prevented young stroke survivors from returning to work.

Complications associated with stroke such as falls, pneumonia, urinary tract infections, pressure sores, venous thrombo-embolism and constipation were reported (White et al, 2002) and were consistent with Annette Ingeman’s findings in a study carried out in Denmark between 2007 and 2010.

2.6.2 Activity limitation associated with stroke
Stroke survivors dwelling in the community in Scotland demonstrated long-standing dissatisfaction one-year post onset, correlating with activity limitation and restricted participation as reported by Hartman-Maeir (2007). Most common types of disability resulting from stroke were restriction in physical activities, incomplete use of limbs, difficulty gripping or holding things and speech difficulties (Senes 2006). About half of stroke survivors with disability living in households needed assistance with health care, household chores, home maintenance, mobility and transport; and around one in four needed help with self care, cognitive or emotional tasks, meal preparation and paperwork (Senes 2006). Stair climbing, toileting, bathing, transferring, walking, feeding, dressing, urinary and/or faecal incontinence are some common activity limitations encountered by patients following stroke (SIGN, November 2002).

Travelling short and long distances was reported as a common problem among stroke patients in a study by Vincent et al (2007). Senes (2006) reported that informal carers provide most of the assistance with activities for stroke patients at home.

2.6.3 Personal factors leading to activity limitations post-stroke

In a study by Nichols-Larsen et al (2005) quality of life in the physical domain was found to have been affected by age of patient, upper limb function, level of education, co-morbidities and race. In the same study age, gender, stroke type, concordance and upper limb function were limiting factors in all domains of functioning. They also reported that those with an ischemic stroke and concordance of paretic arm reported poorer communication. In another study by Glader et al (2003) it was reported that at 3 months after stroke onset, women were more dependent on help for ADL and were more physically and mentally impaired and dependent on other persons.
Roquer et al (2003) and Di Carlo et al (2003) came to the same conclusion that women were more disabled after stroke and also more often suffered aphasic disorders, visual field disturbances, and dysphagia. Petrea et al (2009) agreed with the other researchers that women are significantly more disabled than men more so in eating, dressing, grooming and transfer from bed to chair. Appelros et al (2009) also concluded that strokes are more severe in women, and that case fatality at one month was also higher among women. Other personal factors besides age and gender differences which affect participation of people with disability resulting from stroke include lack of interest, lack of time, lack of knowledge and lack of awareness of supporting systems in their areas (Rimmer et al 2008).

The researchers reached the same conclusion on gender differences that women are older than men when they have their first stroke and that they were more severely impacted by stroke and more disabled than men.

2.6.4 Environmental factors affecting function post-stroke

Environmental factors make up the physical, social and attitudinal environment in which people live and conduct their lives. They can facilitate or present a barrier to a person’s functioning (Senes 2006). The most common environmental barriers include cost of the service, no means of transportation, architectural barriers, organizational policies and practices, discrimination, and social attitudes and practices (Rimmer et al 2008).

2.6.5 Participation Restrictions following a stroke:
Chau et al (2009) found in their study on determinants of participation restriction following stroke that functional ability, depressive symptoms, age, living arrangement and gender predict participation restriction. They however reported that functional ability had the largest direct effect on participation restriction and female gender was associated with higher levels of participation restriction. Women were also less likely to engage in post-stroke social and leisure activities and this might be explained by the great value placed on body image by women. Rimmer et al (2008) came to the conclusion that participation of persons with disability may be hampered by effects of the environment. Environmental factors reported to lower rate of participation among people with disabilities may be related to a variety of environmental and personal barriers, including architectural barriers, organizational policies, cost of rehabilitation program and transportation (Rimmer et al 2008). Dahl (2002) included services available in the society, attitudes and legislation as contributing environmental factors that limit participation of a person with disability in the community.

2.7 Neuropsychiatric challenges post-stroke

Neuropsychiatric disturbances such as post stroke depression were reported to be frequently associated with stroke (White et al, 2002). Depression and anxiety were reported to be common after a stroke and it has been shown that about 25% of patients are clinically depressed 4 months after a stroke. People with severe strokes and those with previous depression are more likely to be depressed after a stroke (Stroke Glos Unit report update 2011). Depression was also diagnosed in more than half of the patients (53%) at 3 months after stroke (Kauhanen 2000, Raju 2010). The prevalence of depression was reported to increase in aphasic patients (Kauhanen 2000).
2.8 Psychosocial impact of stroke

In a study by Daniel et al (2008) in which they looked at the social consequences of stroke, it was reported that slightly more than half of the patients returned to paid employment at 6 to 12 months. Return to work after stroke depends on age, gender, occupational status (manual vs non-manual), self-employment, educational requirement of the job and type of stroke and that men had better chances of returning to work than women (Hannerz et al 2011). Return to work in post-stroke patients has been reported to range between 19% and 73% (Treger 2007). The factors positively related to return to work in stroke patients, are age less than 65 years, high education level and white-collar employment (Treger 2007). Vestling et al (2003) reported that return to work was determined by the person’s ability to walk, nature of job (blue collar or white collar), cognitive ability, basic education and level of self-care. In Vestling et al’s study (2003) 56% of those who could not return to work had blue collar jobs.

Persistent difficulty in carrying out leisure activities and problem of sending and receiving messages was also raised by participants in Vincent’s study (2007). The same findings was reported by Truelsen et al (2003) where participants preferred being in the comfort of their homes than going out. Thompson et al (2009) reported that other categories of social consequences resulting from stroke included negative impact on family relationships (divorce or separation) and inability to continue with what participants saw as traditionally male and female aspects of their role. Deterioration in sexual life, economic difficulties and deterioration in leisure activities were also reported by Daniel et al (2003). More than half experienced family problems such as parent–child conflict, difficulties with child care, and impact on children as caregivers were also reported (Daniel et al 2003).
Thompson et al (2009) also reported that survivors of stroke experience profound, complex and multi-faceted difficulties in many areas of their spousal relationships, in terms of sexuality, sexual desire and sexual functioning which are distressing to both them and their spouses. They also reported that stroke survivors were not only aware of being less tolerant with their spouse following stroke, but also associated this irritability with greater stress, an increase in the frequency of arguments. Participants in Thompson et al (2009) study identified reduction in or total loss of sexual desire following stroke. Fear of recurrent stroke and participants’ sympathy towards their spouses were cited as major reasons for reduction in sexual desire. Kauhanen (2000) in her study on quality of life after stroke reported impairment in sexual function and satisfaction both in stroke patients and spouses. She reported that all the analyzed aspects of sexuality of participants of her study were commonly decreased as a consequence of stroke.

Researchers seem to agree that stroke can affect the social aspect of the individual which can subsequently spill out to other people like spouses, family, children and even the society because the individual on many occasions is not able to go back to work or resume previous social roles.

2.9 Coping mechanism

Coping has been defined as constantly changing cognitive and behavioral efforts to manage specific internal and external demands that are appraised as taxing or exceeding the resources of the individual (Anson et al 2006). They went on to classify coping as either problem- or emotion-focused. Problem-focused coping (active coping) deals directly with the situation itself, either by obtaining more information or skills to manage the situation (ie, self-focused) e.g. using humour or enjoyable activities to manage stress or by altering
the situation (i.e., environment focused). Emotion-focused (passive coping) coping does not attempt to change the situation, but rather focuses on changing the way the situation is attended to (eg, avoidance or denial, use of alcohol or drugs) or altering the subjective appraisal of the situation (e.g. positive reappraisal or acceptance).

It was found that individuals who succumb to stroke used "behavioural disengagement" as a coping strategy, acting as though their stroke didn't happen and diverting their attention away from activities that would help them with rehabilitation and recovery (Grattan 2002). For example, they may skip doctor’s follow-up or physical therapy appointments or ignore recommendations on diet, exercise and other lifestyle changes to prevent a future stroke.

Turning to religion can also help patients cope effectively following a stroke, especially if they are using it to seek strength to deal with the challenges they face (Grattan 2002). Also from the same study acceptance, and positive reinterpretation and growth were found to be some of the common coping mechanisms by individuals with stroke to adjust to life after stroke. Ch’Ng et al (2008) reported that acceptance of life changes, engagement in new roles and activities and the presence of social support appear to be key factors in post-stroke adjustment. Leisure activities serve as an important source of coping in patients with stroke (Carlsson et al 2009; Forsblom et al 2010). Literature in this area is still sparse and therefore calls for further exploration.

CHAPTER 3- RESEARCH METHODOLOGY:

3.1 Study design
A cross-sectional design was used to carry out this study. Baseline information was obtained at recruitment and then follow-up of the recruited participants was done at 3 months post-stroke.

### 3.2 Study Setting

Recruitment of participants was done from Harare, Parirenyatwa and Chitungwiza Central hospitals from 15 March to 15 May 2012. Harare and Parirenyatwa central hospitals are two major referral centres within Harare the capital city of Zimbabwe. Chitungwiza Central hospital is situated 25 kilometres to the North East of the capital city Harare and gets its referrals from Chitungwiza high density areas as well as the surrounding Seke rural area. The three hospitals admit patients with stroke in their general medical wards for investigations and medical treatment of associated conditions up to the time they have stabilised and are discharged to attend further physiotherapy or occupational therapy as out-patients.

### 3.3 Participants

Participants recruited into the study were patients from Harare and Chitungwiza with a clinical diagnosis of stroke attended to as in or out patients at the three selected hospitals. They had to be in the acute phase i.e. not less than two days of stroke onset to rule out Transient Ischemic Attacks and not more than 14 days of onset.

### 3.4 Inclusion criteria:
Patient with a clinical diagnosis of stroke who was attended to at the three health institutions during the specified period,

Should be age 18 years and above,

Participants with stroke not less than two days of onset to rule out the Trans-ischemic attacks and still within 14 days of onset,

Both males and females were eligible,

Participants were residence of Harare and Chitungwiza urban areas.

3.5 Exclusion criteria

Stroke patients less than 18 years of age,

Participants, who had not been seen at the selected hospitals during the specified period,

Non residence of Chitungwiza and Harare urban areas,

Stroke patient who had less than two days and more than 14 days of stroke onset,

Patients who were found to have psychiatric conditions were also excluded from the study.

3.6 Sampling

The study participants were conveniently obtained from Harare, Parirenyatwa and Chitungwiza Central hospitals. This sampling method was preferred in this study to cater for the low numbers as well as the short period for data collection. Eligible stroke patients were identified by a review of daily admission records, referrals from nurses in-charge and therapists on the medical wards of the selected institutions. After stroke patients were identified by aforementioned people the researcher reviewed the referred patients’ medical records to ascertain the diagnosis, type of stroke, age, residential address, contact details. Medical records were reviewed to provide information which could not be provided by most of the participants who had communication difficulties.
Interviewing of participants who were not aphasic was done to determine the eligibility for the study before enrolment. For participants who were aphasic at the recruitment stage information was obtained from their hospital records. Details of eligible patients were then taken and put on information sheets. The information sheets contained details on patient’s code number which also appeared on the questionnaire, diagnosis, age, gender, patient’s physical address, next of kin’s physical address, contact telephone numbers for patient as well as next of kin or other close contact, date of initial stroke onset and date of follow-up. The information sheet was then used to follow-up the enrolled patients after 3 months.

**3.7 Sample size determination**

The sample size was determined using the Dobson formula:

\[ n = \frac{z^2 \times p \times (1-p)}{d^2} \]

Where:

- \( n \) = sample size,
- \( z \) = risk of Type I error= 1.96
- \( p \) = expected prevalence= 0.3 (stroke prevalence for Sub-Saharan Africa provided by Dalal et al 2011)
- \( q \) = 1 – \( p \) = 1-0.3 =0.7
- \( d \) = absolute precision= 0.10

\[ n = \frac{(1.96)^2 \times 0.3 \times (1-0.3)}{(0.10)^2} \]

\[ n = 80.7 \]
Therefore 80 participants were recruited to take part in the study.

3.8 Ethical considerations

Ethical approval was applied for and successfully granted from Joint Research Ethics Committee (JREC) and Clinical Directors of the three selected hospitals. Informed consent was obtained from study participants through signing a written informed consent form before the interview. Care-givers signed informed consent on behalf of participants who were not able to write due to illiteracy or had their dominant hand affected by stroke. Questionnaires were identified by numbers or codes to ensure utmost confidentiality. Interviews were carried out in the privacy of the participant's home away from other family members to enable them to freely disclose information on for example sensitive questions.

3.9 Data collection tools:

A questionnaire developed by the researcher was used to obtain further information from the enrolled patients. The questionnaire was divided into four sections. The first section provided information on demographic data e.g. age, sex, marital status, occupation/income, educational level, religion, area of residence, social habits etc.

The second section pertains to information on the actual illness and services obtained since onset of stroke. In this section, the researcher obtained information on date of onset of stroke, type of stroke, period when medical and rehabilitation treatment was commenced from onset of stroke, frequency of rehabilitation treatment, number of treatment sessions per week/month, outcome since commencing treatment, comorbidity, level of knowledge of stroke and other treatments besides medical help. Information from this section was
used by the researcher to analyse relationships between challenges and for example frequency of rehabilitation sessions.

The third section asked information pertaining to challenges from the time of stroke onset and other experiences. The fourth section further explored information on current functional levels using some information from the Stroke Specific Quality of Life Scale (SS-QOL) and the motor component of Functional Independence Measure (M-FIM). The SS-QOL looks at 12 items which include energy, family roles, communication, mobility, mood, personality, self-care, social roles, thinking, upper extremity function, vision and work/productivity. The M-FIM contains 13 items: eating, grooming, bathing, dressing upper body, dressing lower body, toileting, managing bladder, managing bowel, transferring to bed/chair/wheelchair, transferring to toilet, transferring to tub/shower, locomotion by walk/wheelchair, and locomotion on stairs. Each item is rated with a score from 1 to 7 (1=complete assistance to perform basic ADL, 2=maximal assistance, 3=moderate assistance, 4=minimal assistance, 5=supervision, 6=modified independence, and 7=complete independence in performing basic ADL) (Kwon S 2004). The last section looked at strategies used by participants to cope with challenges of stroke. The last section was completed at follow-up done at three months and all the other sections were completed during both at recruitment and three months post-stroke.

3.10 Data collection activities
Recruitment commenced on 15 March 2012. Daily ward surveillance was carried out by the researcher for eligible patients. The researcher communicated with the ward doctor, nurse in-charge and ward therapist to inform of new admissions with a clinical diagnosis of stroke. The researcher went through the patient’s records to ascertain eligibility of the patient. The researcher used patients’ records that provided information concerning profile of study participants. From the records the researcher was able to obtain information on patient’s residential address, telephone numbers, diagnosis, category of stroke, cause of stroke and other co-morbid conditions. Brief explanation of the purpose and objectives of the study were given to the individual before signing the written informed consent prior to the interview.

Eligible participants were interviewed using an interviewer administered questionnaire on initial contact to obtain baseline information for those who were communicating. For those who were aphasic information was obtained from their hospital records and gaps were filled in at follow-up done at three months. The patients enrolled were informed that they would have to respond to the same set of questions again after 3 months to determine differences in their experiences. Baseline information was entered using blue coloured pen and at follow-up a different colour (red) was used since the same questionnaire was to used for the same participant for comparison purposes. Recruitment of participants ended on 15 May 2012.

The participants were contacted through telephone two weeks prior to follow-up date at 3 months to ensure they were still interested and still available for the second interview. Participants were then physically followed up from 15 June to 15 August at their homes (N=33); some were seen at the selected hospitals (N=2) when they had come for review and
some at their work places (N=3). When participants were contacted two weeks prior to follow-up, the researcher considered those who had invalid telephone numbers or those who could not be physically located and those who had relocated from either Harare or Chitungwiza to rural or other areas lost to follow-up.

3.11 Validity

To ensure validity of information pretesting of the questionnaire was done on five patients with stroke at Bindura hospital and these patients’ results were not included in the analysis of the study. Two colleagues were also given the questionnaires for comments and necessary adjustments were made on the questionnaire.

3.12 Data analysis

Data capturing, processing and analysis was done using Excel, EPI Info version 3.5.3 and STATA 10 from where frequency tables and graphs were obtained to determine distribution of variables.

CHAPTER 4- RESULTS
4.1 Introduction

This chapter presents the results of the study that sought to answer the following question:-
What are the challenges encountered by patients with stroke in the acute phase and three months post-stroke and how do they cope with the challenges that they encounter? Results are presented according to the study objectives. The researcher started by describing the overall study population at recruitment at which baseline data was collected. The researcher then described the socio-demographic characteristics of the participants and outcomes in terms of mortality. Common challenges encountered by participants in this study are presented under the following sub-headings: (1) physical challenges, (2) psychosocial challenges, and (3) cognitive/psychological challenges. Results of functional status and methods of coping by the participants whom the researcher followed up at 3 months are also presented.

One hundred and two (102) patients with stroke were identified for recruitment into the study but 22 of them could not meet the inclusion criteria because they were non-residents of Harare or Chitungwiza, their stroke was more than 14 days old and therefore excluded from the study. Out of a total of 80 who met the study requirements 56 (70%) were females and 24 (30%) were males, ratio 2.3:1. The mean age of the participants was 60.6 years, standard deviation 17.1 with ages ranging from 22-92.

Follow-up at 3 months was hampered by a number of factors which included loss of participants due to death (34%), relocations or inability to locate them (19%) and this reduced the number of participants in the study to thirty eight (38). Twenty seven (N=27; 34%) of the participants had died. Of those who died 17 (63%) were females and 10 (37%) were males and 70.4% of these were above 65 years. More than fifty percent (N=15; 55.6%)
of those who died had right sided hemiplegia (left CVA). Fatality of stroke was high within the first month of stroke onset with 44% of the participants dying during this period. Mortality was most significant in those participants who had unspecified stroke type (N=17, 63%) i.e. where CT scan was not done. Other conditions diagnosed in those who died included hypertension alone (37%); hypertension + diabetes (33.3%), atrial fibrillation/congestive cardiac failure (18.5), renal failure/H.I.V (7.4%) and about 4% of those who died had no other conditions other than stroke.

Of the 15 participants who had relocated 10 had moved out of either Harare or Chitungwiza and the remaining 5 could not be contacted physically or through the phone. Analysis of the study was based on N=38 (47%) of the original figure and of these 29(76%) were females and 9 (24%) were males.

4.2.1 Socio-demographic characteristics of participants
Incidence of stroke was higher in females than males in all the age categories and markedly in the 65+ (46.3%) and 46-55 (22.5%) age groups (Fig 4.1). The majority of the study participants were in the age category above 65 (N = 37, 46.2%). In those above 65 the majority of the participants were women 24 (64.9%) compared to 13 (35.1%) males.

**Figure 4.1:** Distribution of participants by age and gender at recruitment.

4.2.2 Participants’ place of residence
Most of the participants were residing in Harare (Fig 4.2).

**Figure 4.2:** Illustrating place of residence of participants

4.2.3 Marital status
More than half of the participants were married (N = 44; 55%). The majority (75%) of the study participants in the married category were men while a large number of women were widowed women (30.4%) (Table 4.1). Participants in the unspecified marital status category were aphasic and the information on their marital status was also missing in their hospital records.

Table 4.1: Marital status of participants in phase one

<table>
<thead>
<tr>
<th></th>
<th>Males (%)</th>
<th>Females (%)</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Married</td>
<td>18(75%)</td>
<td>26(46.4%)</td>
<td>44(55%)</td>
</tr>
<tr>
<td>Widowed</td>
<td>4(16.7%)</td>
<td>17(30.4%)</td>
<td>21(26.3%)</td>
</tr>
<tr>
<td>Divorced/separated</td>
<td>0(0%)</td>
<td>5(8.9%)</td>
<td>5(6.3%)</td>
</tr>
<tr>
<td>Single</td>
<td>1(4.1%)</td>
<td>2(3.6%)</td>
<td>3(3.8%)</td>
</tr>
<tr>
<td>Unspecified</td>
<td>1(4.1%)</td>
<td>6(10.7%)</td>
<td>7(8.8%)</td>
</tr>
<tr>
<td>Total</td>
<td>24</td>
<td>56</td>
<td>80(100%)</td>
</tr>
</tbody>
</table>

At 3 months post-stroke the following information was also obtained from participants who were previously unable to communicate: More than forty seven percent (47.4%) of the participants were unemployed of whom the majority were women (N=16, 42.1%) (Table 4.2). Many women (79.3%) followed up at 3 months were dependent on either their spouses or relatives for financial support. Most (57.9%) of those that were formally or informally employed were in the income band $151-$300 per month. Primary education
was the highest level attained by most participants (N=16; 42.1%) followed by secondary with 14 (36.8%), tertiary 4 (10.5%) and those who never went to school were 4 (10.5%) (Table 4.2). Ten (26%) of the participants followed in this study smoked and 11 (29%) consumed alcohol. Same number of participants (21.1%) was involved in sports.
**TABLE 4.2:** summary of socio-demographic characteristic of participants at follow-up

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>CHARACTERISTIC</th>
<th>MALE (N)</th>
<th>FEMALE (N)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Marital status:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>7</td>
<td>18</td>
<td></td>
<td>65.8%</td>
</tr>
<tr>
<td>Single</td>
<td>0</td>
<td>1</td>
<td></td>
<td>2.6%</td>
</tr>
<tr>
<td>Divorced</td>
<td>0</td>
<td>3</td>
<td></td>
<td>7.9%</td>
</tr>
<tr>
<td>Widowed</td>
<td>2</td>
<td>6</td>
<td></td>
<td>21.1%</td>
</tr>
<tr>
<td>Separated</td>
<td>0</td>
<td>1</td>
<td></td>
<td>2.6%</td>
</tr>
<tr>
<td><strong>Occupation:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td>4</td>
<td>6</td>
<td></td>
<td>26.3%</td>
</tr>
<tr>
<td>Informal employment</td>
<td>2</td>
<td>6</td>
<td></td>
<td>21.1%</td>
</tr>
<tr>
<td>Pensioner</td>
<td>1</td>
<td>1</td>
<td></td>
<td>5.2%</td>
</tr>
<tr>
<td>Resigned</td>
<td>0</td>
<td>0</td>
<td></td>
<td>0%</td>
</tr>
<tr>
<td>Discharged</td>
<td>0</td>
<td>0</td>
<td></td>
<td>0%</td>
</tr>
<tr>
<td>Unemployed</td>
<td>2</td>
<td>16</td>
<td></td>
<td>47.4%</td>
</tr>
<tr>
<td><strong>Income:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>2</td>
<td>18</td>
<td></td>
<td>52.6%</td>
</tr>
<tr>
<td>$50-150</td>
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<td>3</td>
<td></td>
<td>26.3%</td>
</tr>
<tr>
<td>$151-300</td>
<td>4</td>
<td>7</td>
<td></td>
<td>57.8%</td>
</tr>
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<td>$301-500</td>
<td>1</td>
<td>1</td>
<td></td>
<td>10.5%</td>
</tr>
<tr>
<td>$500-1000</td>
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<td>1</td>
<td></td>
<td>5.3%</td>
</tr>
<tr>
<td><strong>Level of education:</strong></td>
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<td>0</td>
<td>4</td>
<td>10.5%</td>
</tr>
<tr>
<td>Primary</td>
<td>Secondary</td>
<td>Tertiary</td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------</td>
<td>-----------</td>
<td>----------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>12</td>
<td>42.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>10</td>
<td>36.8%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>3</td>
<td>10.5%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Smoking</th>
<th>Yes</th>
<th>6</th>
<th>4</th>
<th>26.3%</th>
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<tr>
<td></td>
<td>No</td>
<td>3</td>
<td>25</td>
<td>73.7%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Alcohol</th>
<th>Yes</th>
<th>7</th>
<th>4</th>
<th>28.9%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
<td>2</td>
<td>25</td>
<td>71.1%</td>
</tr>
</tbody>
</table>

### 4.3 Characteristics of stroke

There was no significant disparity observed in side affected by stroke (Right side 50% and left side 48.8%). One of the affected participants presented with bilateral stroke. The majority of study participants were first ever strokes (N=68, 85%), while 12 (15%) had more than one episode of stroke occurrence.

#### 4.3.1 Types of stroke among the participants

Most of the participants had no CT scanning to verify type of stroke (N=48; 60%) represented by the portion marked unspecified in figure 4.3 below. However in those who had CT scan done (32), haemorrhagic stroke was diagnosed in 18 (23%) and ischaemic stroke was diagnosed in 14 (17%) participants (Fig 4.3).
Figure 4.3: Distribution of type of stroke among the recruited participants.

4.4 Status of participants at the follow-up

Loss to follow-up due to death, relocations or missing reduced the number of participants in the study to 47% as indicated in figure 4.4 below. The final analysis of the study was based on this percentage.
4.5 Frequency of type of stroke among those who died

Mortality was higher in stroke patients with unspecified type of stroke (N=18, 66.7%) as shown in figure 4.5 below.
Fig 4.5: Type of stroke among those who had died

4.6 Episode of stroke/side of stroke
At three months the majority of participants were first ever strokes (87%) (fig 4.6). Fifty percent of the participants at 3 months presented with right side stroke and the other half left side stroke with a ratio of 1:1.

**Figure 4.6**: episode of stroke among the participants 3 months follow-up.

### 4.7 Medical and rehabilitation treatment received by participants
Medical treatment following stroke was commenced on the day of stroke onset in 63% of participants and rehabilitation was commenced within a week in 34.2% and after 2 weeks in 36.8% of participants. More than twenty five percent of the participants never received rehabilitation as either in or out patients. Fifty percent of those who received rehabilitation were cash paying patients and had daily sessions. The remaining participants received rehabilitation treatment either once or twice per week. More than thirty percent (36.8%) also received treatment elsewhere. Faith healing and ceragym were frequently mentioned as other forms of treatment received.

4.8 Physical problems at recruitment

Physical challenges faced by participants are not mutually exclusive. Some participants had more than one or all of the challenges. At recruitment most of the patients (N=73,90%) had problems with mobilisation especially ambulation followed closely by problems of communication which was in (N=68, 85%) of the participants. Both expressive and receptive aphasia were prevalent communication challenges. Slightly more than 50% of the participants had feeding problems mostly due to loss of appetite and inability to sit or use their upper limbs. Pain was expressed by (N=25, 31.3%) of those participants who could communicate and most of them complained of headaches, shoulder pain in the affected upper limb and back pain. Self-care was also a major challenge in which (N=75, 94% of the participants needed assistance with e.g. feeding, bathing and dressing.

4.8.1 Physical challenges at recruitment compared to three months post-stroke
At three months follow-up the proportion of problems were less marked compared to those at recruitment. These were feeding; communication; visual disturbances; bed mobility; bowel and bladder control and self-care. Proportion of participants who reported general body pains (N= 24; 63.2%); sensory (N=23; 60.5%); fatigue (N=20; 52.6%) had increased three months post-stroke and above fifty percent still had problems with walking (N=21; 55.3%) (Fig 4.7).
Figure 4.7: illustrating differences in physical challenges before (at recruitment) and at 3 months.

4.9 Psychosocial problems 3 months post-stroke

Participants frequently reported the following problems: changes in traditional roles i.e. duties expected of the father or mother in the family (N= 31; 81.6%), loss of social life (N=27; 71.2%); loss of sexual functioning (N= 16; 42.1%) and loss of employment either voluntarily or forced retirement (N=11; 28.9%) (Table 4.3).

Table 4.3: illustrating psychosocial challenges 3 months post-stroke onset

<table>
<thead>
<tr>
<th>Variable measured</th>
<th>Frequency (N)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family friction</td>
<td>4</td>
<td>10.5</td>
</tr>
<tr>
<td>Changes in living arrangement</td>
<td>9</td>
<td>23.7</td>
</tr>
<tr>
<td>Marriage break-up</td>
<td>1</td>
<td>0.03</td>
</tr>
<tr>
<td>Sexual problems</td>
<td>16</td>
<td>42.1</td>
</tr>
<tr>
<td>Traditional role changes</td>
<td>31</td>
<td>81.6</td>
</tr>
<tr>
<td>Loss of social life</td>
<td>27</td>
<td>71.2</td>
</tr>
</tbody>
</table>
4.10 Cognitive/psychological challenges

Loss of both short and long term memory and emotional problems were reported in 23.8% of the study participants while personality disorders (mood swings) were recorded in 12.5% of the participants. At follow-up most participants complained of insomnia (N=16; 20%), anger (N=12; 15%) followed by suicidal thoughts which were recorded in N=11 (13.8%) of the participants (Fig 4.8).

Cognitive and psychological problems were common in females. Problems with remembering things following stroke were reported by 42.1% (Fig 4.8) of women. Some of the signs of depression as indicated in figure 4.8 below were common in women. Insomnia was reported by 26.3%, suicidal and hopelessness by 18.4% and mood swings by 23.7% of women in this study.
4.10.1 Comparing cognitive/psychological challenges in participants

Cognitive and psychological problems were more prevalent at 3 months post-stroke as illustrated in figure 4.9. Personality changes (mood), hopelessness, frustration and anger and insomnia were higher at 3 months compared to the acute stage (Fig 4.9).
Figure 4.9: Comparison of cognitive/psychological challenges at recruitment and three months post-stroke.

4.11 Coping mechanisms of participants

More than ninety percent of the participants reported that they adjusted to stroke through family assistance and acceptance (97.4% and 92.1% respectively). More than (N=30, 80%) of the participants had changed their traditional roles e.g. for women cooking, taking care of
children and for men providing for the family because they could no longer perform them while use of exercise and turning to prayer were reported by above 70% of the participants. Slightly more than twenty percent (21.1%) of the participants received counselling following stroke (Fig 4.10).

**Figure 4.10:** Coping mechanisms of participants.

### 4.12 Status of functional ability of participants

AT follow-up most participants had improved in function markedly in terms of mobility and activities of daily living (Table 4.4). More than Ninety-seven percent (97.4%) had gained independence in feeding while bed mobility had increased in 94.7% and 81.6% of the
participants could do transfers and stand independently. Participants still needed assistance in household chores such as cooking, house cleaning, washing, bed-making and social life. Twenty-six (69.4%) of the participants required help with cooking, 80.5% house cleaning and washing and 69.4% bed making. Inadequate use of the affected upper-limb and fatigue were reported as the major contributing factors limiting participants in performing these tasks.

**Table 4.4:** Functional status of participants at recruitment and at 3 months

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>TOTAL HELP (&lt;3 MONTHS)</th>
<th>A LOT OF HELP (&lt;3 MONTHS)</th>
<th>SOME HELP (&lt;3 MONTHS)</th>
<th>A LITTLE HELP (&lt;3 MONTHS)</th>
<th>NO HELP (&lt;3 MONTHS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task</td>
<td>Count</td>
<td>Count</td>
<td>Count</td>
<td>Count</td>
<td>Count</td>
</tr>
<tr>
<td>-----------------------</td>
<td>-------</td>
<td>-------</td>
<td>-------</td>
<td>-------</td>
<td>-------</td>
</tr>
<tr>
<td>Feeding</td>
<td>1 (14)</td>
<td>0 (6)</td>
<td>0 (3)</td>
<td>0 (2)</td>
<td>37 (15)</td>
</tr>
<tr>
<td>Cooking</td>
<td>12 (26)</td>
<td>7 (3)</td>
<td>2 (0)</td>
<td>4 (0)</td>
<td>11 (5)</td>
</tr>
<tr>
<td>Grooming</td>
<td>3 (17)</td>
<td>5 (6)</td>
<td>2 (3)</td>
<td>2 (2)</td>
<td>26 (10)</td>
</tr>
<tr>
<td>Bathing</td>
<td>3 (18)</td>
<td>6 (8)</td>
<td>2 (4)</td>
<td>7 (1)</td>
<td>20 (7)</td>
</tr>
<tr>
<td>Dressing</td>
<td>3 (20)</td>
<td>5 (6)</td>
<td>1 (3)</td>
<td>4 (1)</td>
<td>25 (8)</td>
</tr>
<tr>
<td>Toileting</td>
<td>4 (21)</td>
<td>3 (8)</td>
<td>2 (2)</td>
<td>2 (0)</td>
<td>27 (8)</td>
</tr>
<tr>
<td>Turning in bed</td>
<td>2 (17)</td>
<td>0 (6)</td>
<td>0 (3)</td>
<td>0 (0)</td>
<td>36 (11)</td>
</tr>
<tr>
<td>Sitting up in bed</td>
<td>2 (18)</td>
<td>0 (7)</td>
<td>0 (2)</td>
<td>0 (1)</td>
<td>36 (10)</td>
</tr>
<tr>
<td>Sit to standing</td>
<td>3 (26)</td>
<td>3 (4)</td>
<td>1 (1)</td>
<td>2 (0)</td>
<td>29 (7)</td>
</tr>
<tr>
<td>Standing</td>
<td>3 (26)</td>
<td>3 (4)</td>
<td>1 (0)</td>
<td>0 (0)</td>
<td>31 (7)</td>
</tr>
<tr>
<td>Getting in/out of house</td>
<td>4 (27)</td>
<td>3 (3)</td>
<td>0 (1)</td>
<td>1 (0)</td>
<td>30 (7)</td>
</tr>
</tbody>
</table>

**Transfers:**

- Chair to bed      | 2 (26)| 3 (4) | 1 (1) | 1 (0) | 31(7) |
- Bed to chair      | 2 (26)| 3 (5) | 1 (0) | 1 (0) | 31 (4) |
- Bed to wheelchair | 3 (25)| 1 (4) | 0     | 0     | 0     |
- Wheelchair to bed | 3 (26)| 1 (4) | 0     | 0     | 0     |

**Use of wheelchair**  
- 3 (27)| 0 | 0 | 0 | 0 |

- Walking            | 5 (28)| 2 (3) | 6 (1) | 1 (0) | 24 (6) |
- Cleaning house     | 12 (28)| 7 (2) | 6 (2) | 4 (0) | 7 (4) |
- Making bed         | 13 (28)| 8 (0) | 2 (2) | 2 (0) | 11 (6) |
- Washing            | 13 (28)| 6 (1) | 3 (4) | 6 (1) | 10 (4) |
CHAPTER 5 - DISCUSSION

5.1 Introduction

This study aimed to determine the experiences of patients soon after suffering a stroke and at three months post-stroke in Harare and Chitungwiza. The chapter discusses the findings of the research. The findings are discussed in relation to the aims and objectives of the study.

Recruitment of patients with stroke was done over a period of two months and mainly from Parirenyatwa hospital. The results showed that stroke morbidity and mortality might be quite high in Harare and Chitungwiza. A total of 102 patients with new stroke were identified at these institutions from 15 March 2012 to 15 May 2012 (2 months). Matenga et al (1986) saw 113 cases of stroke within six months at two major teaching hospitals in Harare and Matenga (1997) also identified 488 cases over a period of one year at the two major teaching hospitals and two private hospitals. The results of this study indicate increase in the burden of stroke which could be due to period it was carried out where for example HIV (risk factor to stroke- Amu et al 2005) prevalence in Zimbabwe stands at 15% according to the 2010-2012 Zimbabwe Demographic Health Survey. The figure could be
even higher if all patients with stroke reported at the three selected hospitals and if data collection was commenced at the three selected hospitals at the same time. The three hospitals from which the study was carried out are public institutions and as such patients who are admitted there are mainly from the lower class. Those in the middle and upper class or the working class may seek treatment from private institutions within Harare and Chitungwiza. More cases could also have been missed since shortage of resources could not allow the researcher to engage assistance in the collection of data.

5.2 Socio-demographic characteristics of participants

The study results indicate that the study sample consisted of more women than men (2:1). This shows that more women than men were affected by stroke in this group of participants. Matenga (1997) also found higher incidence of stroke in women than men. Petrea et al (2009) also reported that stroke incidence is higher in women than men. In Ghana male to female ratio was found to be 1:0.96 by Attah-Adjepong (2008). These results seem to contradict with most researchers who found that men are at greater risk of developing stroke than women. A report by NINDS (2004) indicates that men have a 1.25 times risk of developing stroke and this was supported by Martins et al (2007) that being of male gender increases risk of developing stroke. In this study the possible explanation for more females succumbing to stroke than males could be due to the significant difference in numbers between males and females and in the sample size that was not representative.

The proportion of women who were unemployed in this study was greater than men and most of them reported that they were dependent on either their spouses or relatives for financial support. The results also indicate that there were more widowed women than men and all this could have exposed women to a lot of stress and subsequent development of
hypertension which is a common risk factor for stroke. Majority of women mentioned that their stroke could have been caused by psychological stress. Hypertension in this study was higher in women than men which could also explain why stroke incidence was higher in women than men. The discrepancy in the incidences reported could also be due to the low socio-economic status of women in this study since many of them were widows and unemployed and could only afford to go to government institutions such as Parirenyatwa, Harare and Chitungwiza.

The mean age of stroke in this study was 60.6 years ranging from 22 to 92 years with 68.4% of the participants below the age of 65 years. Matenga (1997) reported that 51% of those who were affected by stroke were below the age of 54. These results are consistent with other findings in which almost the same results were reported that in the developing regions stroke is affecting the younger age groups (below 65) (Truelsen et al 2006, Attah-Adjepong 2008). In the less developed regions average age affected by stroke (70% less than 70 years) in the younger age groups is due to the different population age structure resulting from higher mortality rates and competing causes of death (Truelsen et al 2006). Mean age of stroke in the western world have been reported by most researchers to be above 70 years. The results of this study show that morbidity of stroke among the young continues to rise and is worrying as this will negatively impact on the country’s economy. Possible reasons for this may be attributed to emergence of other conditions such as HIV which have been reported to be a risk factor for stroke. In this study the number with HIV was negligent due to the fact that the researcher did not attempt to check whether each of the recruited patients had had an HIV test unless it was indicated in the patient’s records.
Mortality in this study was quite high with 44.4% of those who died dying within thirty days of stroke onset. Grau et al (2001) reported that mortality within 90 days amounted to 14.7% while Scottish Intercollegiate Guidelines Network (November 2002) approximated mortality within 30 days to be as high as 20% in Scotland while Sturm et al (2002) reported that 27% died within 3 months. These results are consistent with other researchers who reported the same findings that between 20% and 50% of deaths in patients with stroke occur within thirty days of stroke onset (Truelsen et al 2006). Case fatality rates after a first ever stroke (all types combined) are 12% at 7 days and 19% at 30 days; haemorrhagic stroke carries a higher risk of death than ischaemic stroke (Davenport 2000). In this study contrary to other researchers, of those who died 18.5% had ischaemic stroke while 14.8% had haemorrhagic and 63% had unspecified stroke type making it difficult to make an ultimate conclusion about mortality between the two major types of stroke.

Most of those who died in the current study were above the age of 65 (70.4%). More than 60% of those who died were women in the 65+ age band. Petrea et al (2009) also reported mortality to be higher in women than men and they thought that this could because women are older than men when they have their first stroke. The high stroke mortality in this study could be due to a number of reasons which may include the management approach. Establishment of type of stroke is crucial since it guides the appropriate treatment for the stroke patient (Senes 2006). Sixty-three percent (63%) of those who died did not have CT Scanning which should be performed within 24 hours to establish type of stroke due to the cost of the diagnostic method which is beyond reach of the many unemployed participants in this study and the technology is not readily available in public institutions. Patients with stroke are admitted on the general medical wards at the three hospitals from which data
was collected and the researcher is not sure if effective care in terms of e.g. neurological observations is provided in such environments. High mortality in this study could also be due to complications of stroke e.g. chest problems or presence of other conditions.

5.3 Challenges of stroke patients 3 months post-stroke:

Three months post stroke there was an increase in the reporting of general body pains especially shoulder of affected arm and back pain, fatigue and sensory problems. Truelsen et al (2003) and Thompson et al (2009) also reported fatigue as a consequence of stroke in their studies. At the recruitment phase 78.9% of the participants whom the researcher was able to follow-up had aphasia and it was therefore difficult to establish presence of body pain or fatigue which may be the reason for higher proportion of participants who reported problems in these areas at follow-up because they could now report. The other possible reasons for increase in the reporting of general body pains and fatigue are that in the acute phase patients with stroke do not do much for themselves since most of them are on bed rest.

Patients with stroke experience general body pains/fatigue as they try to do more for themselves when they move into the sub-acute or chronic phase. Most of them have increased tone which is commonly implicated in emerging of shoulder pain. Poor handling
by carers may result in pulling of tissue structures around the shoulder joint during the time they are assisted in many activities causing subluxation/dislocation of the affected shoulder and pain in the sub-acute or chronic phase. Back pain is experienced in the chronic phase owing to poor positioning during the time they are bed ridden, poor posture or muscle imbalance especially during sitting or ambulation when most patients with stroke exhibit hemiplegic gait. Fatigue results because the stroke patient requires more effort when carrying out an activity after prolonged bed rest.

Other physical problems reported were difficulties in ambulating due to weakness, communication, visual and joint stiffness. These findings are consistent with other studies e.g. Khaunen (2000) reported that aphasia was a common problem and 70% of stroke patients are still aphasic three months post-stroke in her study but in this case 28.9% were still aphasic. The left hemisphere is responsible for language in above ninety percent of people and is the reason why many patients with damage to the left hemisphere have aphasia. If the Brocas area situated in the frontal lobe is involved the patient presents with dysarthria and if the Wernikes’ in the temporal lobe is implicated the patient presents with expressive aphasia, receptive aphasia or global aphasia. Possible damage to these structures could also explain why a higher proportion of participants presented with aphasia in this research. Nichols-larsen (2005) found out that communication problems were more common in patients with concordance of the paretic arm (if the dominant arm is affected by stroke then the person will have communication problems). Twenty five percent of the participants followed at three months had never received rehabilitation as either in or out patients especially speech therapy which was crucial in patients with aphasia. This could
explain why communication difficulties persisted in more than 25% of the participants three months post-stroke.

Stroke causes cognitive and perceptual problems e.g. loss of memory that was quite significant in women (40%) whom the researcher managed to follow up in this study. Loss of memory three months post-stroke could be linked to damage of other structures of the brain due to cerebral vascular accident in this case the hippocampi which are situated one in each hemisphere of the brain, extending to meet the amygdalae within the temporal lobes. The frontal lobe of the brain is also responsible for storage of memory and if implicated in stroke could result in a patient having memory problems. The hippocampus is crucial for forming, storing, and processing memory. The findings indicate that there is need for strengthening address of cognitive problems when health care professionals are dealing with stroke patients.

Most common types of disability resulting from stroke in this study were restriction in physical activities, incomplete use of their limbs (unilateral use of upper or lower limb) difficulty gripping or holding things and speech difficulties (Senes 2006). More than 50% of participants in this study still had problems with ambulation three months post-stroke. Self-care problem was still significant in 28.9% owing to decreased function of the affected upper limb. This is consistent with other researchers’ findings in which for example about 20% of stroke patients were found to depend on other people for everyday activities such as bathing washing, dressing or mobility following stroke (Davenport R et al 2000).

Gender differences were found to play a role in carrying out activities of daily living for example in this study 34.5% of women had self-care problems at three months post-stroke compared to 11.1% of men. Glader et al (2003) also reported that at 3 months after stroke
onset, women were more dependent on help for ADL. Senes (2006) reported that at one year post-stroke more women than men still required assistance with household chores. Possible explanation could be that more women than men in this study presented with depressive symptoms (suicidal and hopelessness by 18.4% and mood swings by 23.7%) which could result in person not caring about self. The majority (34.5%) of women affected by stroke were in the older age group 65+ and natural process of aging could also explain persistent problems with self-care activities at three months post-stroke. Differences in the male to female ratio in the current study which was 2:1 could have contributed to the findings. Possible explanation for these findings may also be due to lack of rehabilitation either as in or out patients since the researcher found out that 25% of the participants who were followed up at three months had never received any form of rehabilitation due to transportation problems, cost and other factors which may warrant further research.

Findings in this study also show that three months post-stroke more than half (66.7%) of the males and 43.8% of the women who were employed before the stroke had not returned to work. Return to work depends on age, gender, occupational status (manual vs. non-manual work), self-employment, educational requirement of the job and type of stroke (Hannerz et al 2011). Vestling et al (2003) reported that return to work was determined by the person’s ability to walk, nature of job (blue collar or white collar), cognitive ability, basic education and level of self-care. In Vestling et al’s study (2003) 56% of those who could not return to work had blue collar jobs. Men had better chances of returning to work than women (Hannerz et al 2011). Findings on gender and return to work are contrary to Hannerz et al’s (2011) in that more men (above 60%) than women had not returned to work may be due to the nature of their jobs. More men than women are normally involved in blue collar jobs.
Men in this study could have been doing blue collar jobs since most of them (88.9%) had not reached tertiary educational level.

Primary education was the highest level of education attained by most participants in the current study an indication that most of them were engaged in manual jobs which is one factor that determines return to work. The other explanation for this could be that patients had not recovered enough to be able to go back to work at three months. Most researches on return to work were done six months to two years post-stroke a period expected for patients to have gained maximum recovery. Vestling et al (2003) reported that 41% had returned to work by 11.9 months post-stroke. Daniel et al (2003) reported that slightly more than half of the patients in their study returned to paid employment at 6 to 12 months. Return to work in survivors of stroke has been reported to range between 19% and 73% Treger et al (2007). They also reported that age less than 65 years; high education level and white-collar employment were factors which determine return to work.

Psychosocial problems notably in areas of loss of traditional role, social life and sexual function were also quite common among the participants in the current research. The same results were reported by Thompson et al (2009) and Daniel et al (2003). Thompson et al (2009) found that participants in their study reported inability to continue with what they saw as traditionally male and female aspects of their roles and deterioration in sexual function. In this study participants had problems with household chores such as cooking, washing, bed making, house cleaning duties that are expected of a wife and now had to be done by for example their spouse or other carers. Decrease in physical function and lack of knowledge about stroke could be the reason for some of the reported problems.
In sexual function most participants feared that if they engaged in sex they may cause the stroke to recur, some did not know that they could still engage in sex, others said they were prevented by pain and others wanted to recover fully first. However comparison of challenges in this area at recruitment and at 3 months was not possible since the majority of the participants were admitted during the time when baseline data was collected and asking questions of this nature was not possible. Many participants in this study still had problems with mobility and persistent weakness in the affected limbs and could be greatly responsible for the loss of social life among the participants.

5.4 Differences in challenges at recruitment and three months post-stroke

The findings of the research show that common challenges encountered by patients with stroke in the acute phase are mainly physical. Most of those physical challenges include communication difficulties (aphasia) and mobility which subsequently affects activities of daily living and self-care. Psychosocial challenges were found to be most prevalent in the chronic phase. General body pains, sensory, fatigue and joint stiffness problems were common three months post stroke. Proportion of patients with personality changes (mood), hopelessness, frustration and anger and insomnia also increased 3 months post-stroke compared to the recruitment stage.

Percentages of those with cognitive problems at recruitment might not be a true representation of the participants’ problems and difficult to compare with those followed at
3 months chronic stage (three months) due to the fact that most participants were still admitted on the wards rendering some questions irrelevant to them.

The findings are a reminder for health workers of the importance of using holistic approach in the management of patients with stroke. Rather than concentrating on addressing physical challenges alone psychosocial/cognitive issues should also be addressed from the acute stage. For example counseling of patients with stroke is important since they go through the bereavement process to mitigate problems (physical or psychological) in the chronic stage.

5.5 Functional status

At three months post-stroke most participants had achieved independence in mobility and self-care. This indicates that most recovery took place within three months of stroke onset as also reported by Bruno-Petrina et al (2012) who reported in their study that maximum stroke recovery occur within the first three months of stroke onset. Most participants still needed total assistance in carrying out household chores and social life at three months post-stroke. The reason for this could be lack of confidence, overprotection by caregivers and largely reduced function of the affected upper limb. Three months post-stroke more women than men still needed total assistance in all areas. A larger proportion of women required total help in household chores such as washing, bed making, house-cleaning and cooking. In the Zimbabwean setting such activities are mainly carried out by women and this could account for the larger proportion of women requiring assistance in these areas.

5.6 Coping mechanisms
More than ninety percent (90%) of the participants reported that they adjusted to stroke through family assistance and acceptance of their condition. In this study family and other people’s support played a big role in helping the participants adjust to the devastating effects of stroke. This indicates that education about stroke to family and other care-givers must be intensified. The results show that social support from families is still available and may therefore need training to look after patients with stroke to reduce overprotection, burnout, carer back injuries and further trauma to the paralysed limbs of the stroke patient. Involvement of family in the management reduces disability considering that 25% never received rehabilitation while admitted on the wards or at home. More than 80% of the participants had to change their roles as wife or husband because they could no longer perform them due to physical disability resulting from stroke while use of exercise and turning to prayer were reported by above 70% of the participants. Grattan (2002) and Ch’Ng (2008) reported that most patients with stroke turn to religion, accept their disability, engage in new roles/activities and accept social support in order to adjust to effects of stroke.

A large number of participants also reported that they used exercise for them to be able to cope and this shows the importance physiotherapists must place on providing home exercise programme for patients with stroke before they are discharged. Findings showed that 25% of the participants never received rehabilitation either as in-patients or out-patients indicating that whatever exercises they were doing to try and cope had not come from professionals. Turning to prayer by above 70% of the participants could have assisted the participants to accept their condition through counselling that church pastors/colleagues provide. Turning to prayer is a cry for help and a call for health
professionals to routinely provide spiritual counselling services to the patient with stroke just like in any other devastating conditions like HIV since they have more knowledge about the condition. From the results more than 90% of the participants in this study used emotion based or passive form of coping (acceptance, family support). It shows how much emphasis health workers should place on educating the stroke patient to try and encourage them to actively participate in finding solutions for their own problems.

CHAPTER 6- CONCLUSION AND RECOMMENDATIONS

6.1 CONCLUSION

The study whose main aim was to determine experiences and coping strategies of survivors of stroke three months post-stroke in Harare was an onerous task for the researcher. Physical follow-up of participants in their homes or work places involved a lot of movement for the researcher as participants were dotted all over Harare or Chitungwiza. It was a great experience for the researcher having to follow through the stages of recovery of a patient with stroke from the acute to the chronic stage and seeing the differences and great need for community based rehabilitation services in urban areas.
However the study results show that stroke is an important health problem with distressingly high fatal outcomes. In this group of participants more women than men are affected by stroke in Harare and Chitungwiza. The younger people below 65 years are the most affected. Stroke mortality was more common in women above the age of 65. Psychosocial problems were the most reported at three months post-stroke and this included loss of social life, changes in traditional roles, loss of employment and sexual function. The results also showed that three months post-stroke a larger proportion of participants still required total assistance in house chores such as cooking, washing, bed making and house cleaning. This therefore calls for all health personnel to work as a team and use a holistic approach to preserve life and reduce impact of stroke in all areas of a patient with stroke.

6.2 Limitations of the study:

The study was carried over a short period of time to make definite conclusions on the experiences of stroke patients.

The study was carried out at Government hospitals and may not be representative of all stroke cases. Not all stroke cases report at the selected public institutions since there are also major private institutions from where the elite covered by medical aid societies prefer.

Excluding carers from this study resulted in a lot of information being missed since a large number of participants had communication difficulties.

The study sample was too small and therefore the results cannot be generalised.

6.3 Recommendations:
There is need for policy makers to commit more funds towards the purchase of functional and affordable diagnostic equipment (CT scan) in public institutions for proper diagnosis of stroke and effective care to reduce mortality.

Rehabilitation team should focus on both the physical and psychosocial sequelae of stroke to facilitate the holistic care to patients with stroke.

Health training institutions to emphasize on how best the psychosocial needs of stroke survivors can be addressed by health personnel.

Government to train more health personnel in the provision of communication therapy for stroke patients with communication difficulties. Currently in Zimbabwe there are no Speech Therapists employed by Government.

Counselling services should be mandatory and made available to persons with stroke and their caregivers.

To promote existing rehabilitation centres into centres of excellence so that they can also cater for adequate rehabilitation of patients with stroke. Ruwa National Rehabilitation Centre already catering for patients with spinal cord injuries and has some facilities for patients with neurological problems can also provide valuable care for patients with stroke if more resources in terms of equipment and specialists are made available.

To strengthen community rehabilitation services in the urban areas where currently this service is provided to children with disabilities only.

6.4 Recommendations for further research:

- To use qualitative research to get more in-depth information on the experiences of survivors of stroke.
- To find out how care-givers manage and how looking after a patient with stroke affects their quality of life.
• To get more information on events preceding death in victims of stroke so that preventive measures can be worked out to preserve life after stroke.

• To compare differences in challenges between those living in the urban and rural community.

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APPENDIX A

LETTERS OF APPROVAL
APPENDIX B

QUESTIONNAIRE ON EXPERIENCES AND COPING STRATEGIES OF STROKE PATIENTS IN HARARE AND CHITUNGWIZA 3 MONTHS POST STROKE.

My name is Juliah Marijeni. I am carrying out a research on experiences and coping strategies of patients with stroke in Harare and Chitungwiza in partial fulfilment of the University requirement for my Masters Degree in Physiotherapy. Below are some questions that attempt to compare if there will be any changes that would have occurred from the occurrence of a stroke and three months on. I would like to encourage you to answer all the questions to the best of your ability so that I get as much information as possible. You are free to ask for any clarifications as we go along. The findings of this study will be of use in
promoting health education programmes for people living with stroke to improve their quality of life. The information you are going to provide will be treated with utmost confidentiality.

**DEMOGRAPHIC DATA:**

Tick in appropriate box:

1) How old are you?  <25 [ ]  25-35 [ ]  36-45 [ ]  46-55 [ ]  56-65 [ ]  65+ [ ]
2) Sex: Male [ ]  Female [ ]
3) Are you: Married [ ]  Single [ ]  Divorced [ ]  Separated [ ]  Widowed [ ]  Other (Specify)……………………………………
4) What is your physical address………………………………………………………………………………………………………?
5) Telephone/cell numbers…………………………Next of kin………………………… Other close contact telephone or cell number…………………………………………………………
6) What is your occupation? Employed [ ]  Informal employment [ ]  Pensioner [ ]  Resigned [ ]  Discharged [ ]  Unemployed [ ]
7) How much do you earn per month?  $50-150 [ ]  $151-300 [ ]  $301-500 [ ]  $500-1000 [ ]  $1000+ [ ]
8) What is your level of education?  None [ ]  Primary [ ]  Secondary [ ]  Tertiary [ ]
9) What is your religion?  Christianity [ ]  Apostolic [ ]  Traditional [ ]  Other: (Specify)
10) Do you smoke currently or in the past? Yes [ ]  No [ ]  If yes state number of cigarettes/packets per day……………………………………
11) Do you drink alcohol currently or in the past: Yes [ ]  No [ ]  If yes state number of pints per day/week?
12) What physical activity were you involved in e.g Sports…………………………………………………………
13) How many children do you have……………..? Still at home………………

Still at school……………………

Working…………………………

14) Who takes care of you at home?
15) Where do you get financial support?

**ILLNESS:**

16) Date of stroke………………………………………………………………………………
17) Side of stroke:  Right [ ]  Left [ ]  Both sides [ ]
18) Type of stroke: Ischaemic [ ] Haemorrhagic [ ] Other: Specify
19) Episode of Stroke: First [ ] Second [ ] Third [ ]
20) What can you tell me about the time you first had your stroke ..............................................?
21) What did you know about stroke ..............................................................................................?

22) After how many days did you seek medical help? On the day [ ] 2 [ ] 1 week [ ] >week [ ]
23) After how long did you start rehabilitation? 1 day [ ] 2 days [ ] < week [ ] > 1 week [ ]
24) How many rehabilitation sessions did you have per day/week/month ........................................?
25) What changes occurred as a result of rehabilitation ......................................................................?
26) How do you pay for your medical bills? Medical aid [ ] Cash [ ] Social welfare [ ]
27) What other conditions besides stroke are you being treated for?
28) What medication are you taking: Anti-hypertensive [ ] anti-diabetic [ ] anti-inflammatory [ ] analgesics [ ] Other (Specify) .................................................................
29) Where else did you seek help for your stroke: Church [ ] N’anga [ ] Other: (Specify) ............
30) In your opinion what do you think could have caused your stroke ............................................?

CHALLENGES:

31) After stroke did you have the following problems: (tick where appropriate)

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eating</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>General body pains</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Visual disturbances</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Sensory problems</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Communication</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Rolling</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Lying to sitting</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Sitting</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>walking</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Pressure sores</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Joint stiffness</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Ability to control passing of stool</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>
32) How did you feel when you were first discharged home..............................?

FUNCTIONAL LEVEL:

33) Show by ticking in appropriate column how you currently are performing the following activities:
<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>TOTAL HELP</th>
<th>A LOT OF HELP</th>
<th>SOME HELP</th>
<th>A LITTLE HELP</th>
<th>NO HELP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eating</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cooking</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Grooming</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Bathing</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Dressing</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Toileting</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Rolling</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sitting up in bed</td>
<td></td>
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<tr>
<td>Sitting to standing</td>
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<tr>
<td>Standing</td>
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<td></td>
</tr>
<tr>
<td>Getting in/out of house</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chair to bed</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Bed to chair</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bed to wheel chair</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>wheel chair to bed</td>
<td></td>
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<tr>
<td>Walking</td>
<td></td>
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<tr>
<td>Using wheel chair</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cleaning house</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Making bed</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
Washing

Taking care of children

Visiting friends

Going to school

Going to work

KEY: 1. Total help - patient unable to do the activity by him/herself

2. A lot of help - patient can do an activity but with a lot of assistance

3. Some help - patient can do an activity with minimal assistance

4. A little help - patient can do an activity with supervision

5. No help - patient is independent and does not require any assistance