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An Analysis of Stroke Quality of Life Profiles and the Role of
Physiotherapy Adherence in Patients Managed at Victoria Chitepo
Provincial Hospital in Mutare

BY

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Abstract

Stroke is the second-leading cause of death and the third-leading cause of death and disability combined in the world. The majority of the global stroke burden resides in lower-income countries like Zimbabwe. Physiotherapy plays a crucial role in stroke rehabilitation, helping patients regain strength, restore movement, and improve function and mobility. This study aimed to analyse the quality of life profiles and the role of physiotherapy adherence in stroke patients managed at Victoria Chitepo Provincial Hospital in Mutare. An analytical Cross-sectional study on patients with sequelae of stroke managed at VCPH for the period January 2023 to January 2024 was conducted. This study sought to determine if there is an association between adherence to physiotherapy and quality of life of stroke survivors. The study included all stroke patients who were 18 years or above, had a clinical or radiological diagnosis of stroke and had had physiotherapy services. Data was collected using a structured interviewer-administered questionnaire and a Stroke Specific Quality Of Life questionnaire (SSQOL). Data analysis was done using SPSS 20. The sample had 62 participants, 33(53.2%) males and 29(46.8%) females. The mean age of stroke onset was 40. History of smoking and the existence of a pre-existing condition were significant risk factors for a stroke in this study, with $p < 0.001$ and $p = 0.002$, respectively. Adherence to physiotherapy was attributed to financial constraints 30(48.4%), transport issues 12(19.4) and pain/depression 4(6.5%). From a possible score range of 49-245 for the 12 domains, the mean SSQOL score was 112, with high scores in vision 3.8/5 and language 3.3/5. The domains with the lowest scores were upper extremity function 1.3/5, social roles 1.8/5, and mobility 2/5. The average score across all domains was scores was 2.67, which signified poor quality of life profiles among the participants. Gender ($T = 0.001$), marital status ($T < 0.001$), history of smoking ($T < 0.001$) and the number of physiotherapy sessions ($T = 0.024$) were statistically significant factors that affected SSQOL scores in this study. Participants who had >20 sessions had higher SSQOL scores. The SSQOL scores were much lower compared to other studies. Stroke survivors suffer from more than just physical limitations. Failure of stroke survivors to perform social and family roles can lead to psychological problems. More effort should be made for the holistic management of stroke survivors across all affected domains. The author recommends setting up NCD registry and surveillance systems, strengthening stroke prevention strategies and using an integrated multidisciplinary approach for a holistic management of stroke survivors to improve their QOL in all aspects.

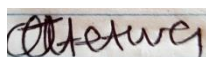
Key words: stroke, quality of life, physiotherapy, adherence,

Declaration

This dissertation is my original work, except where sources have been cited and acknowledged. It has never been submitted, nor will it ever be submitted to another university for the award of a degree.

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Dedication

I dedicate this dissertation to all employees, family members, friends and colleagues being managed for Hypertension, may they be strengthened in knowing that hypertension can be controlled.

List of Acronyms and Abbreviations

ADLs	Activities of Daily Living
ASA	American Stroke Association
AUREC	Africa University Research Ethics Committee
ICF	International Classification of disability and Function
DALYs	: Disability Adjusted Life Years
HRQol	Health-Related Quality of Life
LMICs	Low and Middle-Income Countries
MoHCC	Ministry of Health and Child Care
NCD	Non-communicable Diseases
Qol	Quality of life
SSQOL	Stroke Specific Quality Of Life Scale
WHO	World Health Organisation

Operations Definitions

Stroke - A stroke is an emergency medical condition that occurs when the blood supply to part of the brain is interrupted or reduced, depriving brain tissue of oxygen and nutrients, leading to lasting brain damage, long-term disability or even death (World Stroke Organisation [WSO];2020)

Quality of life is a measure of the impact of stroke on an individual's well-being and ability to perform daily activities. It encompasses physical, psychological, and social aspects of health, including cognitive impairment, emotional distress and social isolation. (Yao et al.,2021)

Physiotherapy- also known as physical therapy- is a type of healthcare profession that focuses on the physical rehabilitation and treatment to aid in an individual's recovery from injury, illness or disability by reducing pain, improving function and restoring their highest attainable independence (Physiopedia,2023)

Rehabilitation - a set of interventions designed to optimise functioning and reduce disability in individuals with health conditions in interaction with their environment due to ageing or health conditions, injuries or traumas (WHO,2022).

Impairment- refers to the deterioration in the functioning of a body part, organ, or system that can be temporary or permanent and can result from injury or disease (Cambridge dictionary, n,d)

Disability is a physical, mental, cognitive, or developmental condition that impairs, interferes with, or limits a person's ability to engage in certain tasks or actions or participate in typical daily activities and interactions (WHO, 2023)

Table of Contents

Abstract	i
Declaration Page	ii
Copyright.....	iii
Acknowledgements	iv
Dedication	v
List of Acronyms and Abbreviations	vi
Operations Definitions	vii
Table of Contents	viii
List of Tables.....	x
List of Figures	xi
List of Appendices	xii
CHAPTER 1 INTRODUCTION	1
1.1Introduction	1
1.2 Background of study	3
1.3 Statement of the problem	5
1.4 Research objectives	6
1.4.1 Broad objective	6
1.4.2 Specific objectives.....	6
1.5 Research Questions	7
1.6 Significance of the study	7
1.7 Delimitation of the study.....	8
1.8 Limitations of the Study	9
CHAPTER 2 REVIEW OF RELATED LITERATURE	10
2.1 Introduction	10
2.2 Theoretical Framework	10
2.3 Risk factors of stroke.....	11
2.4 Impact of stroke on the patient	14
2.5 Role of physiotherapy in stroke	15
2.6 Guidelines of physiotherapy prescription in stroke patients	17
2.7 Factors that influence adherence to physiotherapy	18
2.8 Measuring adherence to physiotherapy	20
2.9 Quality of Life Post-Stroke	20

2.10 Gaps in the Literature	23
CHAPTER 3 METHODOLOGY	23
3.1 Introduction	23
3.2 Research design.....	24
3.3 Study site	24
3.4 Study population	24
3.5 Sample size and Sampling Techniques	25
3.6 Data Collection Instruments.....	26
3.7 Data Collection Procedure	26
3.8 Data management and Analysis	27
3.9 Pretesting.....	28
3.10 Dissemination of results	28
3.11 Ethical considerations	28
Summary	29
CHAPTER 4 RESULTS	29
4.1 Introduction	29
4.2 Sociodemographic characteristics of participants	30
4.3 Determinants for adherence	32
4.4 Analysis of Stroke Specific Quality Of Life Scale (SS-QOL).....	35
Summary	50
CHAPTER 5: DISCUSSION.....	52
5.1 Introduction	52
5.2 Characterisations	52
5.3 Determinants of adherence	54
5.4 Stroke Quality of Life profiles	57
5.5 Conclusions	63
5.6 Recommendations	64
5.7 Areas for further study	65
References	67

List of Tables

Table 1: Socio-demographic details of participants	30
Table 2: Socio-demographic and determinants for adherence	33
Table 3: Stroke Specific Quality of Life questionnaire with average domain scores	35
Table 4: Group statistics and mean SSQOL scores	36
Table 5: Recommendations.....	64

List of Figures

Figure 1: International Classification of Functioning, Disability and Health (ICF)	11
Figure 2: Pie chart showing the gender distribution	31
Figure 3: Smoking and drinking distribution patterns amongst respondents.....	32
Figure 4: Frequency distribution for physiotherapy sessions	34
Figure 5: Bar graph showing SSQOL scores against marital status	37
Figure 6: Energy Domain analysis.....	38
Figure 7: Family roles participation.....	39
Figure 8: Language and speech impairments	40
Figure 9: Mobility challenges distribution.....	41
Figure 10: Mood of participants	42
Figure 11: Personality responses of participants.....	43
Figure 12: Self-care challenges faced by participants.....	44
Figure 13: Effect of stroke on social roles	45
Figure 14: Thinking challenges faced by participants	46
Figure 15: Upper limb use and fine motor skills.....	47
Figure 16: Vision analysis of participant	48
Figure 17: Effect of stroke on work and productivity.....	49
Figure 18: Relationship between SSQOL score and number of physiotherapy sessions.....	50

List of Appendices

Appendix 1: English Informed Consent.....	73
Appendix 2: Shona Informed consent.....	75
Appendix 3: English questionnaire with demographics and SSQOL	77
Appendix 4: Shona questionnaire with demographics and SSQOL	84
Appendix 5: Permission letter from study site.	92
Appendix 6: AUREC Approval	93

CHAPTER 1 INTRODUCTION

1.1 Introduction

Non-communicable diseases (NCDs), which account for 74% of all deaths worldwide, are chronic illnesses that are long-term and are brought on by genetic, physiological, environmental, and behavioral factors (CDC, 2023). The main types of NCDs include cardiovascular diseases (such as heart attacks and stroke), cancers, chronic respiratory diseases (such as chronic obstructive pulmonary disease and asthma), and diabetes. These diseases disproportionately affect people in low- and middle-income countries (LMICs), where more than three-quarters of global NCD deaths occur (Kushitor et al., 2021).

Stroke is the second-leading cause of death and the third-leading cause of death and disability combined in the world (World Health Organisation [WHO], 2022). These sobering statistics highlight the enormous burden stroke places on global health systems and societies. The condition's dual impact (combining high fatality rates with significant long-term disability in survivors) creates particularly devastating socioeconomic consequences. Low- and middle-income countries bear a disproportionate share of this burden, accounting for nearly 70% of global stroke deaths despite having more limited healthcare resources.

Current epidemiological data reveal a stark disparity in global stroke distribution, with approximately 70% of stroke cases and stroke-related deaths occurring in low- and middle-income countries (LMICs) (World Health Organization, 2022). This disproportionate burden persists despite these nations having younger population demographics overall. According to the WSO (2022), Low and Middle-Income Countries (LMICs) bear over 86% and 89% of the global burden of stroke deaths and Disability Adjusted Life Years (DALYs),

respectively. The high DALY burden underscores not only the mortality rate but also the long-term disability and economic strain stroke survivors face in LMICs, where rehabilitation services are often scarce.

Addressing this crisis requires targeted investments in stroke prevention, affordable treatment options, and stronger healthcare systems to reduce preventable deaths and improve quality of life for survivors. This could be resulting from the increased incidence of NCDs, hence a higher prevalence of risk factors like hypertension, dyslipidemia, obesity, and diabetes mellitus (CDC, 2023). Unfortunately, LMICs have only 20% of the global resources needed to combat this burden; thus, poverty increases the risk of developing NCD complications in LMICs (Mlambo & Hlongwana, 2020). Several factors contribute to this imbalance, including limited availability of acute stroke treatments (such as thrombolysis and thrombectomy), inadequate primary healthcare infrastructure for hypertension and diabetes management, and socioeconomic barriers preventing timely medical intervention. Additionally, the rising prevalence of modifiable risk factors—such as unhealthy diets, physical inactivity, and tobacco use—further exacerbates the crisis in these regions.

Lifestyle-modifiable risk factors for stroke include being overweight or obese, reduced physical activity, tobacco use, and alcohol abuse (Veerbeek et al., 2014). The prevalence of stroke in Zimbabwe is estimated to be 93.42 per 100,000 population (WSO, 2022). Zimbabwe lacks good surveillance systems for NCDs, and hence the prevalence and incidence rate of strokes are not well known.

1.2 Background of study

A stroke, also known as a cerebrovascular accident, is a neurovascular event that takes place when the brain's blood supply is compromised due to a blood clot in micro vessels or a brain vessel rupture (Lopez, 2006). The World Health Organization (WHO) defined stroke as “rapidly developing clinical symptoms and/or signs of focal, and at times global, loss of cerebral function, with symptoms lasting more than 24 hours or leading to death, with no apparent cause other than that of vascular origin”, as cited by (Veerbeek et al., 2014).

The WHO’s definition also highlights the vascular origin of stroke, emphasizing the role of modifiable risk factors such as uncontrolled hypertension, smoking, physical inactivity, and poor diet—many of which are increasingly prevalent in LMICs due to urbanization and lifestyle shifts. Tackling this crisis requires a multi-sectoral approach, combining public health campaigns for early detection, affordable acute care, and long-term policy investments to strengthen healthcare systems in underserved regions.

Dyslipidaemia was the second most common cause of cerebral stroke after hypertension (Matenga et al., 1986). Dyslipidaemia, characterized by abnormal levels of lipids such as high cholesterol and triglycerides, was identified as the second most prevalent risk factor for cerebral stroke, following hypertension. This finding, reported by Matenga et al. in 1986, highlights the significant role of lipid metabolism disorders in cerebrovascular diseases. The study emphasized that while high blood pressure remained the leading contributor to stroke, dyslipidaemia posed a substantial and independent threat, underscoring the importance of lipid management in stroke prevention strategies.

A 2017 study by Kaseke et al. examining stroke aetiologies at tertiary hospitals in Zimbabwe revealed that hypertension-related disorders were the leading cause, accounting for 58% of all stroke cases. This underscores the critical role of uncontrolled high blood pressure in cerebrovascular events within the region. Additionally, diabetes mellitus contributed to 18% of strokes, reflecting its growing impact as a metabolic risk factor. Notably, 14% of strokes were linked to Human Immunodeficiency Virus (HIV), highlighting the unique burden of HIV-associated vasculopathies in Zimbabwe's stroke epidemiology. These findings emphasize the need for targeted public health interventions addressing hypertension control, diabetes management, and HIV-related vascular complications to reduce stroke incidence. The same study showed a prevalence of 7.7% among patients admitted in the medical wards, with ischemic strokes being more prevalent than haemorrhagic ones in the age groups 40-64 and 65+ (Kaseke et al., 2017).

A crucial aspect of stroke recovery is physiotherapy, which uses evidence-based techniques for managing functional limitations, participation restrictions, and motor impairments (Veerbeek et al., 2014). When compared to standard care, systematic evaluations show that early, intensive PT improves functional results by 25–30% (Langhorne et al., 2018).

The intensity and duration of physiotherapy can vary based on individual needs and progress (McGlinchey et al., 2019). The study by Veerbeek (2014) distinguished four post-stroke phases: the hyper acute or acute phase (0–24 hours), the early rehabilitation phase (24 hours until 3 months), the late rehabilitation phase (3–6 months), and the chronic phase (6 months and after).

Adherence to physiotherapy was critical for optimal recovery outcomes in stroke patients. However, several factors can affect a patient's adherence, including physical impairments, fear of falling, lack of social support, and economic issues (Ntsiea, 2019a). Depression and severe functional disability increased the caregiver burden and economic costs from hospital admissions for the management of secondary stroke complications (Khalid et al., 2016). The same study assessed Quality of life (QoL) post stroke using the Stroke-Specific Quality of Life Scale (SS-QOL).

Physiotherapy was associated with improved QoL of stroke survivors (Olaleye et al., 2014). The QoL post-stroke was a multidimensional concept that includes physical health, psychological state, level of independence, social relationships, personal beliefs, and relationship to salient features of the environment (Mpemba et al., 2020; Olaleye & Lawal, 2017; Veerbeek et al., 2014; Vive et al., 2020; Vive, Geijerstam, et al., 2020).

Despite the known benefits of physiotherapy in stroke rehabilitation and its potential impact on QoL, there was limited research investigating the direct relationship between adherence to physiotherapy and QoL profiles in stroke patients, particularly in the Zimbabwean context. Understanding this relationship between physiotherapy and stroke can inform strategies to improve adherence rates and subsequently enhance the QoL for stroke survivors.

1.3 Statement of the problem

Stroke is the leading cause of disability worldwide, with many survivors enduring long-term impairments that impact their quality of life. Physiotherapy is critical in stroke recovery, assisting patients in regaining functional abilities and improving their quality of life. A 3 year

trend for neurological conditions at the VCPH rehab department, where the majority are strokes showed a 7% and 10.8% increase in incidence rate from 67% to 74% and 62.4% to 71.2% in 2020-2021 and in 2021 to 2022 respectively. However, adherence to physiotherapy was frequently low, limiting rehabilitation effectiveness and significantly impacting patients' quality of life.

Despite the importance of this topic, there had been little research into physiotherapy adherence and its influence on the quality of life among stroke patients in Mutare, Zimbabwe. This knowledge gap was impeding the development and implementation of interventions to increase physiotherapy adherence and the quality of life for stroke survivors in this region.

1.4 Research objectives

1.4.1 Broad objective

To analyse the physiotherapy adherence effect on the quality of life in patients with sequelae of stroke managed at Victoria Chitepo Provincial Hospital in Mutare

1.4.2 Specific objectives

- i. To describe the level of adherence to physiotherapy among stroke patients managed at Victoria Chitepo Provincial Hospital in Mutare
- ii. To find out the determinants for adherence to physiotherapy among stroke patients managed at Victoria Chitepo Provincial Hospital in Mutare
- iii. To describe the QoL profiles of stroke patients managed at Victoria Chitepo Provincial Hospital in Mutare

- iv. To determine the correlation between adherence to physiotherapy and QoL profiles in stroke patients managed at Victoria Chitepo Provincial Hospital.

1.5 Research Questions

The following research questions guided this research

- i. What is the level of adherence to physiotherapy among stroke patients managed at Victoria Chitepo Provincial Hospital in Mutare?
- ii. What are the determinants of adherence to physiotherapy among stroke patients managed at Victoria Chitepo Provincial Hospital in Mutare?
- iii. What is the Quality of life profiles of stroke patients managed at Victoria Chitepo Provincial Hospital in Mutare?
- iv. What is the relationship between adherence to physiotherapy and QoL profiles in stroke patients managed at Victoria Chitepo Provincial Hospital in Mutare?

1.6 Significance of the study

Stroke is a leading cause of disability and death worldwide, and its impact is growing in low- and middle-income nations like Zimbabwe. Stroke survivors frequently endure physical, cognitive, and emotional problems that have a negative impact on their quality of life. Strokes are mostly associated with hypertensive disorders with likely outcomes of death and disability especially in older populations

Physiotherapy is an important part of stroke rehabilitation since it helps restore movement, function, and independence by reducing the impact of impairments hence improving the patients' QoL. There is a need to evaluate the amount of adherence to physiotherapy and its impact on the quality of life in Zimbabwean stroke patients.

Although there has been progress in the medical management of strokes, very little attention has been given to quality of life profiles and social-related events for these patients in our context. Supporting stroke prevention efforts (both primary and secondary) in Zimbabwe, can make a significant difference in reducing the burden of stroke. Research plays a crucial role in developing effective prevention strategies and improving stroke care. The surveillance systems for NCDs can also be upgraded so that the magnitude and burden of it can be fully comprehended.

This research provided evidence that will contribute to the knowledge gap on the adherence to physiotherapy and the quality of life of stroke patients, informing the implementation of effective and sustainable stroke rehabilitation programs, ultimately resulting in enhanced health outcomes and well-being of stroke survivors in Mutare and Zimbabwe as a whole.

1.7 Delimitation of the study

This study was delimited to stroke patients in Mutare, and the findings may not be generalised to stroke patients in other regions of the country. Only adult stroke patients had been prescribed physiotherapy were included, whilst paediatric stroke patients, stroke patients who did not receive physiotherapy, and people who had other neurological problems

were excluded from this study. This study was limited to individuals who had a stroke and had undergone physiotherapy sessions from January 2021 to December 2023. This study had participants who had a clinical or radiological diagnosis confirming the stroke for at least 3 months to 5 years regardless of the type of stroke.

For data collection, adherence and demographic data was collected using a self-designed questionnaire whilst quality of life was assessed using the standardised SSQoL which was developed by Williams in 1999 and was validated in various samples of stroke survivors. The SSQoL defines the specific group of people that the research focused on (stroke survivors) to improve the accuracy of the results. A convenient sampling method was used in this study.

1.8 Limitations of the Study

While the SS-QOL provided valuable insights, responses relied on patients' subjective perceptions and were a risk of inaccurate recall or bias. There were challenges in accessing stroke survivors with severe functional limitations, as they were unable to access health care centres. The study focused on outpatients only and excluded those bedridden at home with no capacity to visit the hospital. The wide variability of physiotherapy regimens that can be prescribed to stroke patients affected adherence rates and quality of life outcomes differently. There was no control group, hence it was difficult to attribute changes in quality of life solely to physiotherapy adherence.

CHAPTER 2 REVIEW OF RELATED LITERATURE

2.1 Introduction

This chapter will review literature on physiotherapy adherence and Quality of Life profiles locally, regionally and internationally. Great emphasis will be given to what other studies have reported as the role of physiotherapy in stroke recovery and quality of life assessment measures. Literature reviewed helps identify risk factors and social determinants that have been considered in previous studies and also picks up the gaps in knowledge, associations and points of action. Search engines utilized included Google Scholar, PubMed, PLOS Global Public Health, and BMC Public Health.

2.2 Theoretical Framework

A comprehensive biopsychosocial framework for appreciating health and disability is offered by the World Health Organization's (WHO) ICF, which is especially helpful in research and practice related to stroke rehabilitation (World Health Organization [WHO], 2001). The ICF integrates biological, individual, and social dimensions through its components of Body functions and structures (impairments), Activities (capacity and performance), Participation (involvement in life situations), and contextual factors.

This comprehensive strategy is optimal for stroke recovery, as a combination of biological and psychosocial factors account for 73% of the diversity in results (Geyh et al., 2011).

The framework's standardized language enables cross-disciplinary communication, international outcome comparisons, and comprehensive assessment covering all rehabilitation domains. The ICF Core Sets for stroke (62 categories) also provide structured intervention planning, patient-centred goal setting and outcome measurement standardization (Booth & Kendall-Taylor, 2020).

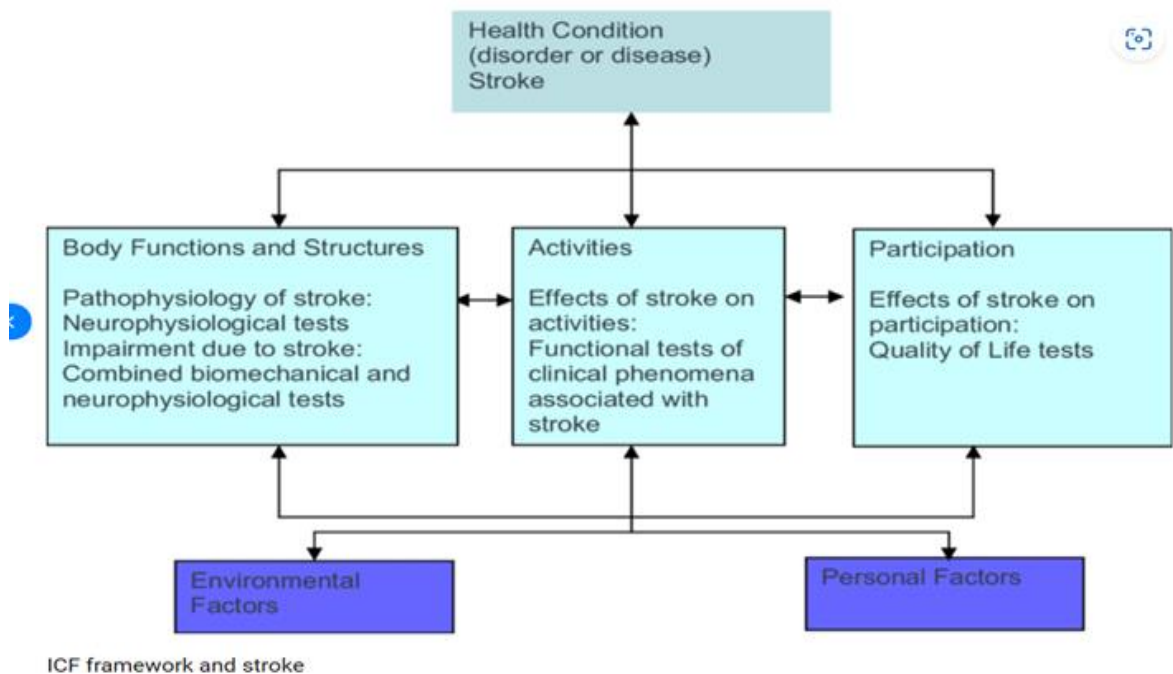


Figure 1: International Classification of Functioning, Disability and Health (ICF)

2.3 Risk factors of stroke

A significant modifiable risk factor for stroke was lifestyle. Smoking, unhealthy diets and lack of regular physical activity were identified as behavioural and modifiable risk factors of stroke (Feigin et al., 2016; Kaseke et al., 2017; Veerbeek et al., 2014). The American Stroke Association ASA (2020) states that more than 90% of the global stroke burden can be attributed to modifiable risk factors, and controlling behavioural and metabolic risk variables could prevent more than three-quarters of the global stroke burden. These behavioural risk factors lead to the developed of NCDs and further increase the likelihood of strokes from increased hypertension, diabetes mellitus and dyslipidaemia (Kaseke et al., 2017).

Patients with HIV and diabetes had significantly higher risk of developing all types of strokes whilst arterial fibrillation and diabetes mellitus were more prevalent risk factors in ischemic strokes versus hypertension being a more prevalent cause for haemorrhagic strokes in Sub Saharan Africa. A study by Boehme et al., (2017) highlighted that environmental factors of pollution, particularly air, and inflammatory disorders and infections were significant triggers of stroke in LMICs. This same study points to air pollution as a key contributor to the worldwide stroke burden thus minimizing exposure to air pollution should be one of the primary prevention goals.

Lifestyle factors such as food and passive smoking are also significant environmental risk factors for stroke (Reis et al., 2018). Tobacco use, metabolic syndrome, obesity, excessive alcohol intake, and oestrogen therapy were risk variables were the foundation of both primary and secondary stroke prevention (Didier, 2016). Conventional risk factors explain just half of the risk of ischemic stroke, and genetic predisposition may account for some of this unexplained risk (Manosalva et al., 2016). Most studies found a link between a family history of stroke and stroke instances, which is stronger in younger individuals as well as with

specific stroke subtypes, such as small vessel disease (lacunar stroke) and large vessel atherosclerotic stroke (Chauhan & Debette, 2016).

HIV and Vascular Disease in Stroke

In sub-Saharan Africa, the simultaneous presence of HIV infection and cerebrovascular illness poses a unique epidemiological challenge. Even with antiretroviral therapy (ART), individuals living with HIV have a 2-3 times higher risk of stroke than people without HIV (Benjamin et al., 2021). Several synergistic factors contribute to this increased risk. A chronic HIV infection accelerates atherosclerosis by causing endothelial dysfunction through immunological activation and chronic inflammation (Mosepele et al., 2022). According to autopsy reports, 58% of young HIV+ adults (≥ 35 years) had coronary artery plaque, compared to 23% of matched controls (Mangili et al., 2020). Cerebral arteriopathy is facilitated by opportunistic infections (like varicella-zoster vasculitis) and direct viral effects

According to MRI studies, cerebral vasculopathy is present in 42% of HIV+ stroke patients compared to 12% of seronegative stroke patients (Connor et al., 2019). Traditional vascular risk factors are aggravated by protease inhibitors, such as lopinavir, a common HIV treatment drug, which is associated with exacerbating insulin resistance and dyslipidemia (DAD Study Group, 2023). This combined burden is reflected in Zimbabwe's 14% HIV-attributable stroke rate (Kaseke et al., 2017). Increased vascular risk monitoring, such as yearly carotid intima-media thickness screening, is necessary for HIV-specific stroke prevention (Hsue et al., 2021). Optimizing ART regimens to reduce metabolic consequences (EACS Guidelines, 2023) and addressing multimorbidity through integrated HIV/NCD clinics (Pastakia et al., 2020)

Multimorbidity is addressed by integrated HIV/NCD clinics (Pastakia et al., 2020).

2.4 Impact of stroke on the patient

Hypertension is one of the most common non-communicable diseases affecting more than 1 billion people in the world, and a leading cause of cardiovascular diseases (WHO, 2023c).

Depending on the stroke's intensity and the part of the brain it affects, the long-term repercussions of a stroke might differ substantially. Physical impairments can include difficulties swallowing (Vive et al., 2020), balance or coordination issues (Olaleye et al., 2014), and weakness, numbness, or paralysis on one side of the body (Yang et al., 2020). Those who would have had a stroke may struggle to speak, hear, read, write, sit, or walk.

Along with emotional and psychological diseases including sadness, anxiety, lack of confidence, mood swings, and even suicidal thoughts, cognitive and memory issues (Kobyłańska et al., 2019) might present in some stroke survivors. Mental challenges may also include issues with attention, memory, judgment, spatial awareness, and problem-solving (Ntsiea, 2019b).

Many people with stroke reported fatigue, which did not get better with rest (Clarke et al., 2018). Some stroke victims had difficulty swallowing, which made it difficult to eat and drink, leading to insufficient calorie and nutrient intake (Arief Sulistyanto et al., 2022). Changes in Sensation and Perception such as pain, sensory changes (such as loss of hearing or vision), and spatial neglect (a lack of awareness of objects on the side of the body affected by the stroke) caused individuals to be reluctant and or hesitant to move (Kobyłańska et al., 2019).

The physical restrictions or communication issues can made stroke survivors feel alienated. Relationship dynamics may change as a result of the physical, cognitive, emotional, and

behavioural changes a stroke survivor experiences after the stroke (Haro et al., 2014). Failure in returning to work was also noted as having an impact on the psychological and financial status of the patient and their societal relations (Kobyłańska et al., 2019)

Stroke rehabilitation involves a multidisciplinary team with doctors, nurses, physiotherapists, occupational therapists, speech and language pathologists, social workers, psychologists, therapeutic recreation specialists, and vocational counsellors to address the diverse and specialized needs for each patient (Weinstein et al., 2016).

2.5 Role of physiotherapy in stroke

Early Rehabilitation Phase (24 hours – 3 months) begins shortly after a patient has been medically stabilised (ASA, 2014). This phase emphasizes intensive neurorehabilitation to maximize functional recovery. Therapies target mobility, speech, and activities of daily living (ADLs), capitalizing on the brain's heightened neuroplasticity during this period.

Late Rehabilitation Phase (3–6 months) is characterised by slow but progressive recovery, but remains, with therapy shifting toward adaptive strategies for residual deficits. Patients often transition from inpatient to outpatient care, focusing on community reintegration and long-term independence. Gaining strength through physical therapy can aid in the recovery of lost movement after a stroke, allowing the patient to be as self-sufficient as possible and improve function and Mobility (James & McGlinchey, 2022).

Physiotherapists offer treatment that is specialised to the patient's needs as part of the rehabilitation process. Positioning, early mobilisation (West & Bernhardt, 2013), balance training, gait and mobility training (Olaleye et al., 2014; Veerbeek et al., 2014), upper limb training (Sehatzadeh, 2015), cardiorespiratory training, strength training (Chan, 2015),

electrotherapy, spasticity management (Winstein et al., 2016), contracture management, hydrotherapy (Pérez-De la Cruz, 2020) and fatigue management (Naess et al., 2012) are just a few examples of the many different treatment methods and techniques that fall under this category.

To regain lost skills, intensive aerobic therapy is required. A study investigating in patients with subacute stroke found that correlations between Aerobic exercise Time (AET) with patient variables varied according on ambulation capacity, higher AETs being found in those with higher ambulatory capacity (Nozoe et al., 2023). As part of a seven-day specialised stroke rehabilitation service, the National Institute for Health and Care Excellence (NICE) suggests a minimum of 45 minutes of physical therapy five days a week.

Each stroke patient's recovery process is unique, so the specific physiotherapy treatments used vary based on the individual's needs and progress. This made the evaluation of physiotherapy impacts statistically small if we fail to consider patient specific QoL improvements. The objective for the rehabilitation is to increase independence and function in daily activities and prevent secondary complications. In chronic stroke survivors, supervised exercise lowered cardiovascular risk variables (e.g., ↓ systolic BP by 5.2 mmHg) (Billinger et al., 2022).

These studies emphasise the significance of physical therapy in enhancing functional outcomes, mobility, controlling post-stroke depression and fatigue, and facilitating an early return to work, all of which contribute to an improvement in quality of life following a stroke.

2.6 Guidelines of physiotherapy prescription in stroke patients

Each person's recovery after a stroke is different and is based on the type of stroke they had and the part of their brain that was affected (Olaleye et al., 2014). After a stroke, rehabilitation begins 24 to 48 hours afterwards.

The American Stroke Association (ASA) states as a guideline that sustained and coordinated effort from a large team, including the patient and his or her goals, family and friends, other caregivers (e.g, personal care attendants), physicians, nurses, physical and occupational therapists, speech-language pathologists, recreation therapists, psychologists, nutritionists, social workers, and others, communication and coordination among these team members was paramount in maximizing the effectiveness of the International classification of function and disability (ICF) (Winstein et al., 2016). An MDT ideally discuss the patient's health and makes necessary prioritisation to meet their needs (McGlinchey et al., 2019). The practice of this is rather limited in developing countries, including Zimbabwe, to the author's knowledge.

After a stroke, a patient typically stays in the hospital for five to seven days (Gittins et al., 2020). The stroke care team ideally assess the stroke's consequences during this time to establish the rehabilitation strategy. The first three months following a stroke are crucial for rehabilitation and are also the time when patients will experience the greatest improvement ; . These studies identified an optimal or sensitive period for intensive motor training after stroke. Sehatzadeh (2015) found that near-full recovery is attained if intensive task-specific motor training occurs during this sensitive window.

The recovery of brain function and brain cells starts within a few days but takes months or even years to stabilise post stroke (Dromerick et al., 2021). Everyone experiences recovery after a stroke differently; it may take weeks, months, or even years (Pedersen et al., 2021). Following a stroke, rehabilitation focuses on performing repeated, targeted exercises that are task-specific activities to facilitate the return of functional tasks (Vive et al., 2020). The rehabilitation strategy will therefore be determined by the body part or category of abilities that the stroke has damaged, with the aim of improving those primarily affected functions (Kobyłańska et al., 2019).

The completion of formal rehabilitation (usually three to four months following a stroke) should therefore not be interpreted as the end of the restorative process. In many ways, stroke has been treated medically as a momentary or transient condition rather than a chronic disorder that requires follow-up after the acute event (Winstein et al., 2016).

2.7 Factors that influence adherence to physiotherapy

Patient education and goal setting is very important when dealing with chronic conditions that have long term impairments on expectations and prognosis (Ntsiea, 2019). Adherence to an exercise program may be impacted by how it is prescribed, the workouts, the environment, frequency, intensity, and duration. This pertains to the experience individuals delivering the treatment (Sehatazadeh, 2015) hence therapist factors in terms of interaction and tailored treatment approaches can affect the patients level of adherence (Clarke et al., 2018). Positive feedback and monitoring can encourage patients and guarantee that they are capable of carrying out workouts properly (Mlambo & Hlongwanalosa, 2020). The same study mentions that patients can benefit from cognitive methods to help them recall their activities and comprehend their advantages the likes of a physical handout home exercise program.

Winstein et al. (2016) and Fawcett-Henesy , (2001) alluded that involving family members and community support can boost adherence by offering emotional, financial and practical support. Patients can be motivated to participate actively in their rehabilitation through self-efficacy (Kobyłańska et al., 2019). Incentive methods of adherence can be increased with positive reinforcement from their significant others.

Building trust and enhancing adherence can be accomplished by actively hearing patients' worries and responding in an empathic manner (Clarke et al., 2018). By taking into account detailed information on the patient's health state, environmental circumstances, and personal aspects, these strategies seek to make rehabilitation meaningful for patients. For this, we consider the international classification of function and disability (ICF), which is a holistic approach applicable for a multi-disciplinary team approach for patient care (Veerbeek et al., 2014).

Adherence may be hampered by poor facilities and infrastructures (Mlambo & Hlongwana, 2020; Vive et al., 2020). For some individuals, the cost of therapy can be a barrier to access health services (Ernst, 1990). The willingness and capacity of a patient to follow a physiotherapy regimen might be affected by social and cultural factors that can affect a patients post discharge therapy support especially after admission (Tamang & Dorji, 2021). Adherence can be impacted by physical limitations following a stroke, such as problems with balance and mobility as well as a fear of falling and fatigue (Khalid et al., 2016).

The study by Mlambo and Hlongwana (2020) notes that it is critical to remember that the following adherence factors are interconnected, necessitating a multifaceted strategy that involves the patient, their family, and the medical staff. Depending on the experts' clinical backgrounds in rehabilitation, the usage of these tactics may change.

2.8 Measuring adherence to physiotherapy

There isn't yet a standard way to measure adherence. The tools that are used the most frequently are diaries and logbooks (McGlinchey et al., 2019). For patients visiting rehabilitation clinics for musculoskeletal illnesses, the General Rehabilitation Adherence Scale (GRAS) was created and validated to measure adherence to physical therapy treatment (Scheffler et al., 2022). However, additional studies may be required to apply it to stroke sufferers.

The type and frequency of functional activity, as well as compliance with mitt use during, are recorded in logbooks. The number of sets and repetitions of exercise, as well as the weekly step activity, are other factors that are noted in the logbooks. Patients may be required to keep a "record of practice" or a logbook detailing how frequently they work out. Data about a patient's exercise routine can also be gathered using surveys and questionnaires.

A measurement tool called the Physical Activity Scale for Individuals with Physical Disabilities (Washburn et al., 2002) is used to gauge how well physical activity recommendations are being followed. It is important to note that the advantages of prescription independent practise in addition to therapy depend on patients adhering to the programme since studies show that adherence to exercises decreases over time (Vannorsdall et al., 2022).

2.9 Quality of Life Post-Stroke

In order to evaluate the Quality of Life profiles of stroke patients, it is necessary to consider several different facets of their health and wellbeing. The HRQoL of stroke survivors is evaluated using a method called Health-Related Quality of Life information on

sociodemographic, clinical profiles, the risk of malnutrition, and degree of physical activity gathered via an interviewer-administered survey (Pedersen et al., 2021). HRQoL has not yet been given a single, widely accepted definition. Numerous techniques are available to measure HRQoL, and these tools reflect both the complexity and diversity of health domains, from the patients, the family and societal relations and exposure.

The Stroke Specific Quality of Life Scale (SS-QOL) is a standardised patient-centred outcome measure designed to assess the quality of life in terms of health, specifically for stroke patients. It has 49 items that are scored using 5-point Linkert scales, giving both overall and domain-specific results (Arief Sulistyanto et al., 2022). Mobility, upper extremity function, energy, work and productivity, mood, self-care, social roles, family roles, vision, language, thinking, and personality are among the 12 domains. The SS-QOL is meant to be self-administered, it can be completed in around 10-15 minutes without any special training (Williams et al., 1999). It can also be effectively provided to stroke patients over the phone. The cognitive-social-mental and physical health components also point to specific functional issues that can differ between and within nations and regions due to variations in the structuring of rehabilitation services.

The EuroQol-5 Dimension instrument is used to evaluate stroke survivors' HRQoL. Mobility, self-care, regular activities, pain/discomfort, and anxiety/depression are the five dimensions that are assessed (Mahesh et al., 2020)

Patient-centred assessments emphasise client understanding, a responsive strategy, and a compassionate setting. They can be evaluated by speaking with clients, their families, and staff members, as well as by monitoring the clients in their homes. Another tool is the Post-stroke Quality of Life Index (PQOLI), which is a new QOL tool developed for stroke

survivors in Sri Lanka (Mahesh et al., 2020). The PQOLI consists of 21 items that are categorized into four domains: physical and social function, environment, financial independence, and pain and emotional well-being. Other tools include the Stroke Adapted Sickness Impact Profile (SA-SIP30), the Stroke Impact Scale,

The SF-36 has 36 questions assessing 8 domains of vitality, bodily pain, general health perceptions, mental health, physical functioning, physical role functioning, emotional role functioning, and social role functioning, and takes 7 minutes to complete. It is simple to use quality-of-life measures for routine monitoring and assessment of care outcomes for adult patients, managed by care organisations. (Pérez-De la Cruz, 2020) used it to evaluate the effect of aquatic therapy on stress, fatigue and quality of life in chronic stroke patients.

The SF-6D offers a method for generating preference-based index scores from the SF-36. It defines the six domains (physical functioning, role limitation, social functioning, pain, mental health, and vitality) using 11 items from the SF-36. There are between four and six tiers in each area, totalling 18000 different health states.

SF-12 is a 12-item patient-reported Short Form Health Survey. It is a scaled-down version of the SF-36 and is commonly used since it yields comparable results for measures of physical and mental health while placing a far lower burden on respondents to obtain measures of overall mental and physical well-being.

Self-reported quality-of-life questionnaires used with individuals after stroke reveal that it is not advisable to presume that all techniques are equally valid. The decision to use of an assessment tool may be influenced by a number of variables, including the particular

components of quality of life being investigated, the patient group, and the context of the study.

2.10 Gaps in the Literature

Specific literature for the prevalence and incidence of strokes is limited specifically for Zimbabwe. The same can be said about information on quality of life, adherence to physiotherapy and DALYs. The burden of stroke in our context is not well articulated and hence appropriate preventive methods and policy cannot be adequately emphasised and put up.

CHAPTER 3 METHODOLOGY

3.1 Introduction

This chapter described the study setting, study population, study period, sample size, and sampling methodologies. This chapter also included a detailed description of the data

collection tools and data analysis techniques that were used. The ethical considerations for this study were also stated

3.2 Research design

An analytical cross-sectional study methodology was used. A cross-sectional study design allowed the investigator to capture a snapshot of the population at a single point in time. It's an effective way to assess the prevalence of a condition or behaviour, in this case adherence to physiotherapy and its association with another variable (like quality of life).

3.3 Study site

Victoria Chitepo Provincial Hospital is located in Manicaland, Zimbabwe. It serves as a referral centre for the 7 districts in the region and is the only public health centre that offers physiotherapy services in Mutare. Participants for this study were selected from the rehabilitation outpatient department, which is where patients get the physiotherapy services at the hospital. The rehabilitation personnel also offer physiotherapy services for admitted stroke patients at the hospital but these were not included in the study as their communication would likely to be impaired.

3.4 Study population

The study population were stroke patients, aged 18 and over who had been undergoing physiotherapy treatment.

3.4.1 Inclusion criteria

- Stroke survivors aged 18 years and above at Victoria Chitepo Provincial Hospital, Mutare

- Survivors with sequelae of stroke at Victoria Chitepo Provincial Hospital, Mutare
- Stroke survivors who were receiving physiotherapy services at Victoria Chitepo Provincial Hospital, Mutare
- Stroke diagnosis by the doctor with or without radiographic imaging
- Stroke survivors with the ability to speak and understand English and or Shona

3.4.2 Exclusion criteria

- Stroke survivors with severe cognitive impairment or aphasia
- Individuals with TIA or specific and isolated facial nerve palsy
- Individuals who had other medical conditions that could interfere with the outcome of the study

3.5 Sample size and Sampling Techniques

Using Dobson formula: $n = \frac{Z^2 \cdot p \cdot q}{e^2}$

n=sample size Z=confidence interval

p=proportion of stroke patients

q=1-p

Level of precision 10%

Assuming 10% prevalence of patients admitted with strokes (Kaseke et al., 2017) and a non-response rate of 10%,

A minimum sample size of 35 patients was needed. 65 participants were recruited during data collection

Convenience quota sampling was used in this study. Persons visiting the outpatient department clinics (stroke and rehab) were also conveniently selected. The patients who came to visit the clinic for consultations, doctors' reviews, and physiotherapy sessions were included in the study. The days to visit the clinics were chosen randomly from February 2024 to April 2024. Every stroke patient meeting the inclusion criterion who visited the clinic on the day of the study and was willing to participate was enrolled on the study.

3.6 Data Collection Instruments

Logbooks were used for demographic information, stroke severity, duration and intensity of physiotherapy. The investigator used a structured interviewer administered questionnaire (Appendix A) to collect more information on demography and determinants to adherence to physiotherapy. QoL was assessed using the Stroke-Specific Quality of Life Scale (SS-QOL) (Arief Sulistyanto et al., 2022) which takes 10-15 minutes to complete. A Shona translated questionnaire (Appendix B) was also used for all Shona speaking participants.

3.7 Data Collection Procedure

A written informed consent was obtained from every participant who volunteers to participate in the study. Following a written informed consent, participants were interviewed in a private and confidential space using an interviewer-administered structured questionnaires and medical records to collect the data. Demographic and clinical data, including age, gender, time since stroke, and severity of stroke, were collected and so was

attendance records. The QoL profiles were assessed using a validated instrument, the Stroke-Specific Quality of Life Scale (SS-QoL).

It took about 8 minutes to complete Section A on demographics and about 12 minutes to complete section B on SSQOL, taking a total time of 20 minutes of Appendix A and B. No names or identification information were captured on the questionnaire for safety, anonymity and confidentiality. The data was collected as patients waited to receive rehabilitation services in the morning at the department.

3.8 Data management and Analysis

In this study, Microsoft excel was used for data management (capturing, cleaning and tabulation). The computer used was password protected and the password was not to be shared by anyone to cover the risk of access by non-study persons. Descriptive statistics were used to summarize the participants' characteristics and level of adherence to physiotherapy. The QoL profiles was analysed using inferential statistics, such as the independent t-test or analysis of variance (ANOVA), to compare the scores between different adherence groups.

Multiple regression analysis was employed to identify predictors of QoL in stroke patients, including adherence to physiotherapy. A p-value <0.05 was considered statistically significant. An analysis of the relationship between adherence to physiotherapy and QoL profiles was done. This involved regression analysis or other appropriate statistical tests. SPSS 15 was used for the analysis. The analysed data was visually presented using frequency tables, and different graphs.

3.9 Pretesting

Pretesting of data collection tools and data collection procedure was done. 10 questionnaires were used as a pre-test and responses were analysed for any need of alterations and clarity to ensure reliability and validity. Questionnaires were pretested on patients from the same hospital and these were excluded from the study.

3.10 Dissemination of results

Study findings will be shared with Africa University, Victoria Chitepo Provincial Hospital, Provincial Medical Directorate Executive, and Ministry of Health and Child Care staff, the rest of the community and the general public locally, nationally and regionally.

3.11 Ethical considerations

Before starting the study, ethical approval was obtained from the relevant ethics committee. Institutional approval was sought from the medical superintendent of Victoria Chitepo Provincial Hospital whilst ethical approval was also sought from AUREC. Written and informed consent was obtained from all participants, and no obvious possible harm to participants was experienced. Anonymity was used ensuring their privacy and confidentiality. Participation in this study was voluntary and participants were free to opt out at any stage in the study.

Summary

This chapter details the study methodology that was utilised by describing the study design, study setting, population under study, sampling technique that was used, data collection tools and procedure and data analysis together with ethical considerations. This information guided the study to ensure that insights into the effect of adherence to physiotherapy on the QoL profiles of stroke patients managed at Victoria Chitepo Provincial Hospital are provided.

CHAPTER 4 RESULTS

4.1 Introduction

This chapter presents the findings of the primary data analysis and the interpretations of the information gathered from the structured demographic questionnaire and the standardized SSQOL questionnaires to analyse adherence to physiotherapy among stroke patients in

Mutare, Zimbabwe, and its impact on their quality of life. Univariate, bivariate, and multivariate analysis were conducted. The analysis aims to fill this knowledge gap by exploring the barriers to physiotherapy adherence and examining the influence of low adherence on the quality of life of stroke survivors. This study analysed data from 62 participants from VCPH aged 18 years and older who had stroke and had received at least 3 physiotherapy sessions.

4.2 Sociodemographic characteristics of participants

Out of the total sample of 62 participants, 33 participants (53.2%) identified as male, while 29 participants (46.8%) identified as female. The ages ranges between 29 to 98 years. A pre-existing condition was present for 58(93.5%) of the participants with Hypertension being the most prevalent condition 23(36.5%). Most of the participants 37 (59.7%) were married whilst 51(82.3%) were Christians. A History of Smoking was found as a statistically significant risk factor for stroke in this study.

Table 1: Socio-demographic details of participants

	Participant n (%)	P value
Mean age	40	0.645
Gender		
Male	33(53.2)	0.326
Female	29(46.8)	
Marital status		
Single	11 (17.7)	0.550
Married	37 (59.7)	
Divorced	10 (16.1)	
Widower	4 (6.5)	
Pre-existing condition		
Hypertension	23 (36.5)	<0.001*
Diabetes	18 (28.6)	
Heart Disease	9 (14.3)	
HIV	8(13.7)	

Religion			
Christian	51(82.3)		
Apostolic	11(17.8)	0.750	
Smoking History			
Yes	20(32.3)		
No	42 (67.7)	0.002*	
History of Alcohol use			
Yes	35(56.5)		
No	27 (43.5)	0.645	

The gender distribution of the participants is illustrated in Figure 2 below

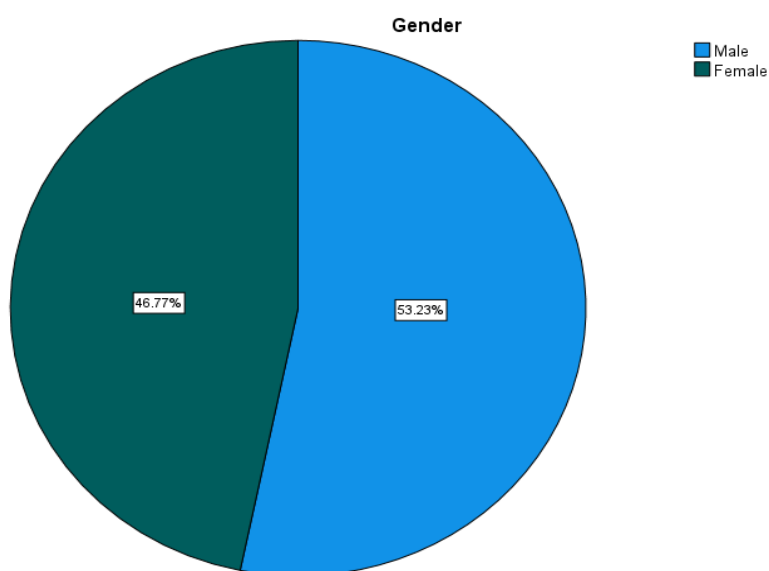


Figure 2: Pie chart showing the gender distribution

The distributions of smoking and alcohol use risk factors are is presented in Figure 3 below.

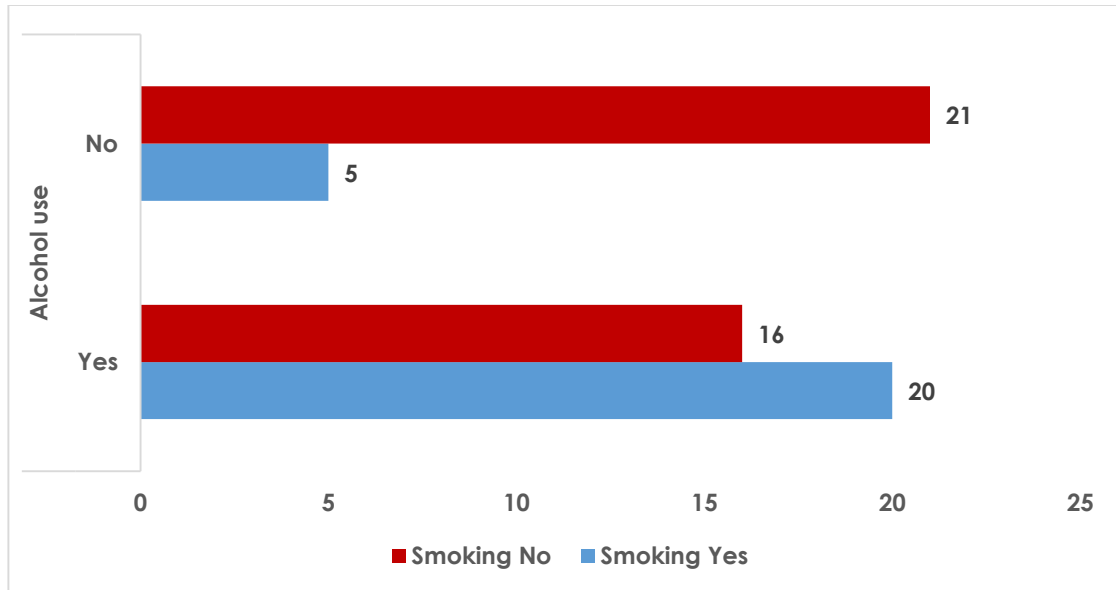


Figure 3: Smoking and drinking distribution patterns amongst respondents

Based on the provided cross tabulation data, we can note that out of the total sample of 62 respondents, 25 individuals (40.3%) reported having a history of smoking, while 37 individuals (59.7%) stated that they did not have a history of smoking. When examining the history of alcohol use, 36 respondents (58.1%) reported having a history of alcohol use, while 26 respondents (41.9%) reported no history of alcohol use.

4.3 Determinants for adherence

Of the 62 participants, 4(6.5%) had a stroke in 2024, 18(29%) had a stroke in 2023, and 32(51.6%) had lived with a stroke for 2 or more years. Over half, 36(58.1%) participants attended less than 5 sessions. A small portion, 4(6.5%) reported missing sessions due to experiencing severe pain or facing difficulties with the prescribed exercises. Nearly half, 30(48.4%) stated cost as a reason for missing a session whilst 12(19.4%) participants

mentioned not having someone to accompany them to their sessions as reason for missed sessions. Cash reigns supreme as the primary payment method for 40(64.5 %) of the participants. Table 4.2 below summaries the information on sociodemographic and determinants for adherence for the participants in the study

Table 2: Socio-demographic and determinants for adherence

Description		Participants
Gender	Male	33(53.2)
	Female	29(46.8)
Year of stroke	2021	17(27.4)
	2022	8(12.9)
	2023	18(29.0)
	2024	4(6.5)
Physiotherapy attendance	<5sessions	36(58.1)
	5-10 sessions	8(12.9)
	10-20 sessions	6(9.7)
	>20 sessions	12(19.4)
Missed physio sessions	Yes	58(93.5)
	No	4(6.5)
Reasons for missing sessions	Financial constrains	30(48.4)
	Travel logistics and escort challenges	12(19.4)
	Pain and or depression	4(6.5)
Payment method for medical bills	Cash	40(64.5)
	Medical insurance	6(9.7)
	Social fund	4(6.4)
Knowledge about stroke	Pensioner	12(19.4)
	Yes	52(83.9)
	No	10(16.1)

Available home exercise program from physiotherapist	Yes	56(90.3)
	No	6(9.7)
Compliance to home exercise program	Yes	44(71)
	No	18(29)

Figure 4 is a bar chart that depicts the distribution of physiotherapy session attendance among the survey participants. It reveals the number of visits completed by each participant in 2024. Majority 35(56.5%) of the participants had less than 5 physiotherapy sessions.

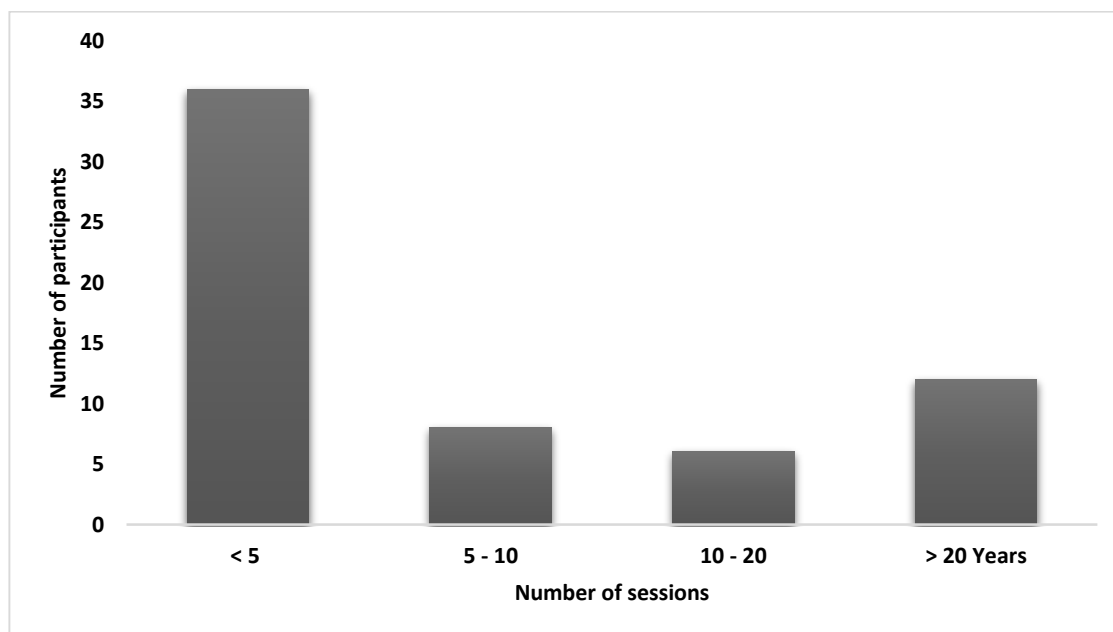


Figure 4: Frequency distribution for physiotherapy sessions

Of the 62 participants, 52(83,9%) knew the causes and effects of stroke as informed by their physiotherapist, 56(90.3%) had a home program and 44(71%) were doing their exercises at

home. All 62 of the participants responded as having family and relatives as their biggest support system.

4.4 Analysis of Stroke Specific Quality Of Life Scale (SS-QOL)

This analysis serves as a crucial component of the overall study, as it sheds light on the multifaceted impact of stroke on quality of life. Table 4.3 below summarises the SSQOL analysis by looking at each domain's average 5 Likert scale scores. Higher scores imply a better quality of life. Participants scored highest on vision (3.5) followed by language (3.3), mood (3.2) and thinking (3.0). The lowest scores were for upper extremity function (1.3), social roles (1.8) and, mobility (2.0). The average domain score was 2.67 which denotes a significant low quality of life amongst the participants.

Table 3: Stroke Specific Quality of Life questionnaire with average domain scores

Domain	Average score	Interpretation
Energy	3.2	Moderate energy levels
Family roles	2.5	Low participation in family roles
Language	3.3	Minimal proficiency challenges in communication
Mobility	2.0	Significant mobility challenges
Mood	3.2	Minimal changes in mood
Personality	3	Evident changes in personality
Self-care	2.4	Significant challenges with self-care
Social roles	1.8	Low involvement in social roles
Thinking	3.0	Neutral changes in thinking capacity
Upper extremity function	1.3	Very high limitation in upper extremity function
Vision	3.8	Mild changes to vision
Work/ productivity	2.5	Significant reduction in work and productivity
Average	2.67	Significant low quality of life profile

The minimum SSQOL score in this study was 85 whilst the highest was 158. The mean SSQOL score was 112. Gender, marital status, smoking history and the number of physiotherapy sessions that participant had and the missed physiotherapy sessions were statistically significant factors affecting SSQOL score during analysis. The table 4.4 below summarizes the group statistics with the mean SSQOL scores.

Table 4: Group statistics and mean SSQOL scores

Description		Participants	Mean score	SSQOL	T value
Gender	Male	33(53.2)	109.4		0.001*
	Female	29(46.8)	121.0		
Marital status	Single	11(17.7)	115.8		<0.001*
	Married	37(59.7)	119.1		
	Divorced	10(16.1)	108		
	Widowed	4(6.5)	156		
Religion	Christian	51(82.3)	158		0.443
	Others	11(17.7)	167		
Smoking history	Yes	35(56.5)	115		<0.001*
	No	27(43.5)	114		
History of alcohol use	Yes	36(58)	110		0.062
	No	26(41.9)	121		
Number of physiotherapy sessions	<5	36(58.1)	114.8		0.024*
	5-9	8(12.9)	108.5		
	10-20	6(9.7)	102.7		
	>20	12(19.4)	125.3		

Missed sessions	physiotherapy			0.008*
	Yes	58(93.5)	115.4	
	No	4(6.5)	106	

Participants that were single had a higher mean SSQOL score compared to those who were married and divorced. The minimum and maximum scores are also illustrated in figure 5 below.

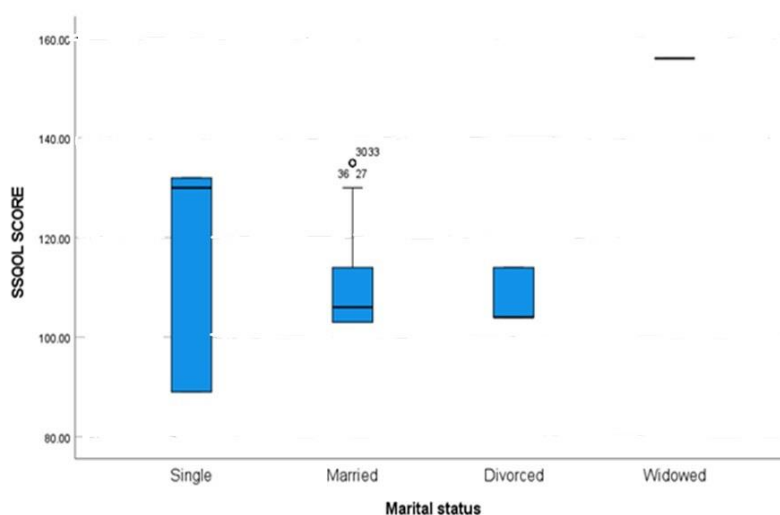


Figure 5: Bar graph showing SSQOL scores against marital status

4.4.1 Energy domain analysis

The majority (over 74%) reported being able to join in fun family activities, while (over 41%) also indicated needing rest periods throughout the day. This highlights fatigue as a prevalent challenge post-stroke. Responses regarding overall tiredness were more varied, with roughly

equal numbers of participants agreeing, disagreeing, or remaining neutral. Fig 6 below represents the responses on energy graphically.

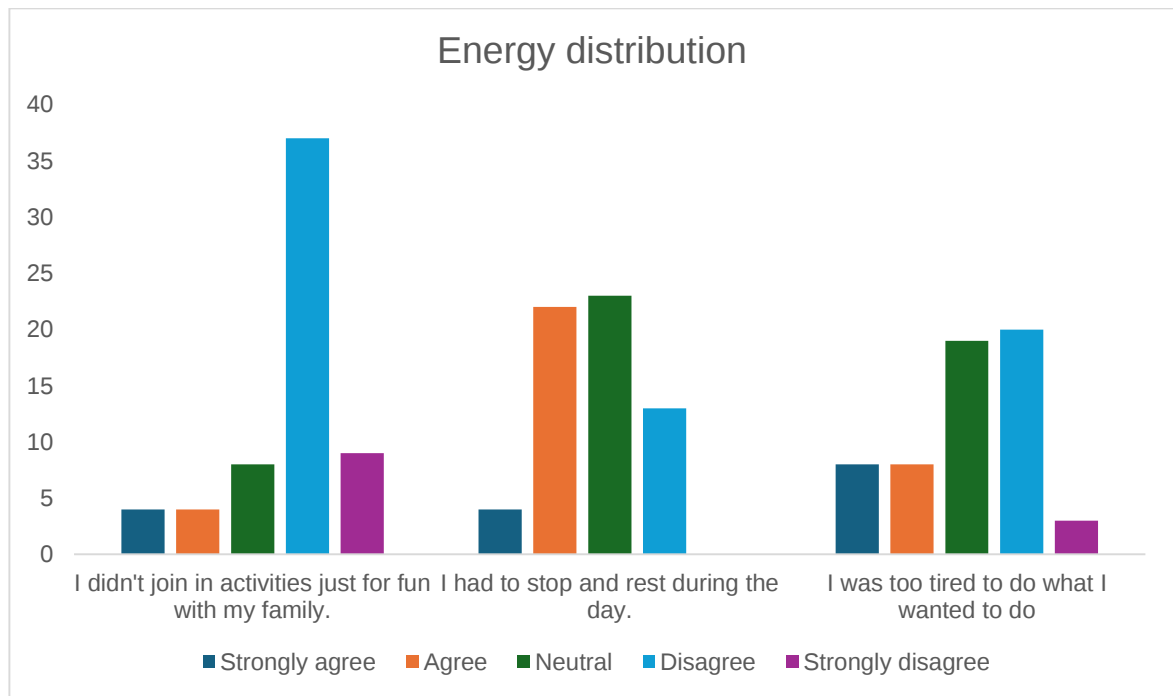


Figure 6: Energy Domain analysis

4.4.2 Family roles domain analysis

While most participants (over 59%) disagreed with feeling excluded from fun family activities, a concerning number (over 44%) expressed feeling like a burden to their families

because of their physical condition. Figure 7 explores how stroke affects participants' roles and relationships within their families.

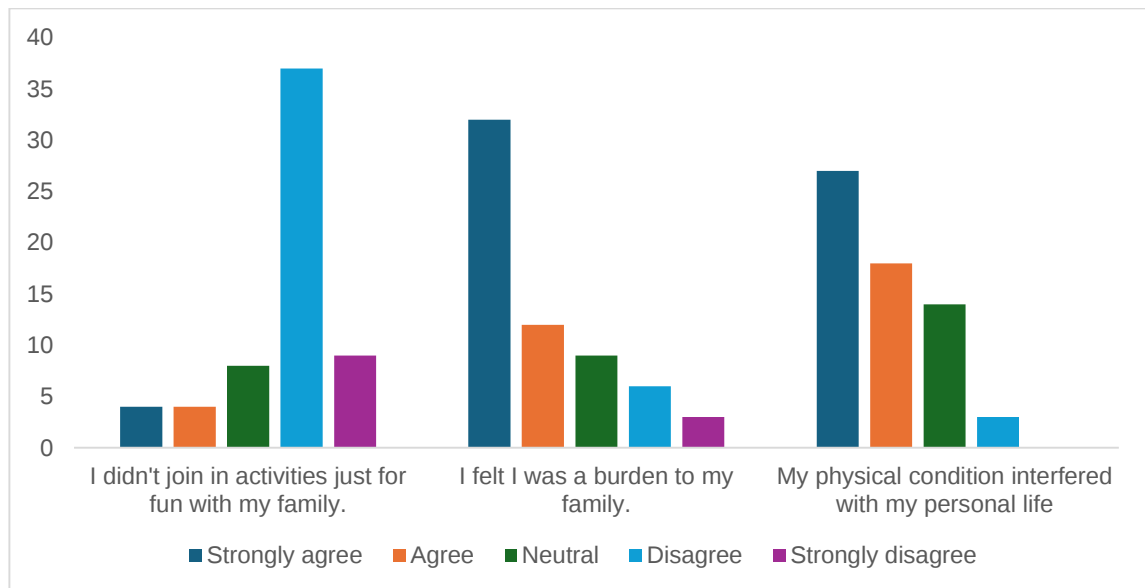


Figure 7: Family roles participation

4.4.3 Language Analysis

The data reveals that a significant proportion of participants 35(56.4%) agreed to having trouble speaking, with stuttering, slurring, or stammering being the most frequently reported challenges. Similar participants indicated that other communication methods like difficulty speaking clearly enough to use the telephone, finding words, and others having trouble understanding them impaired their effectiveness to communication Figure 8 illustrates the self-reported speech difficulties experienced by participants following stroke.

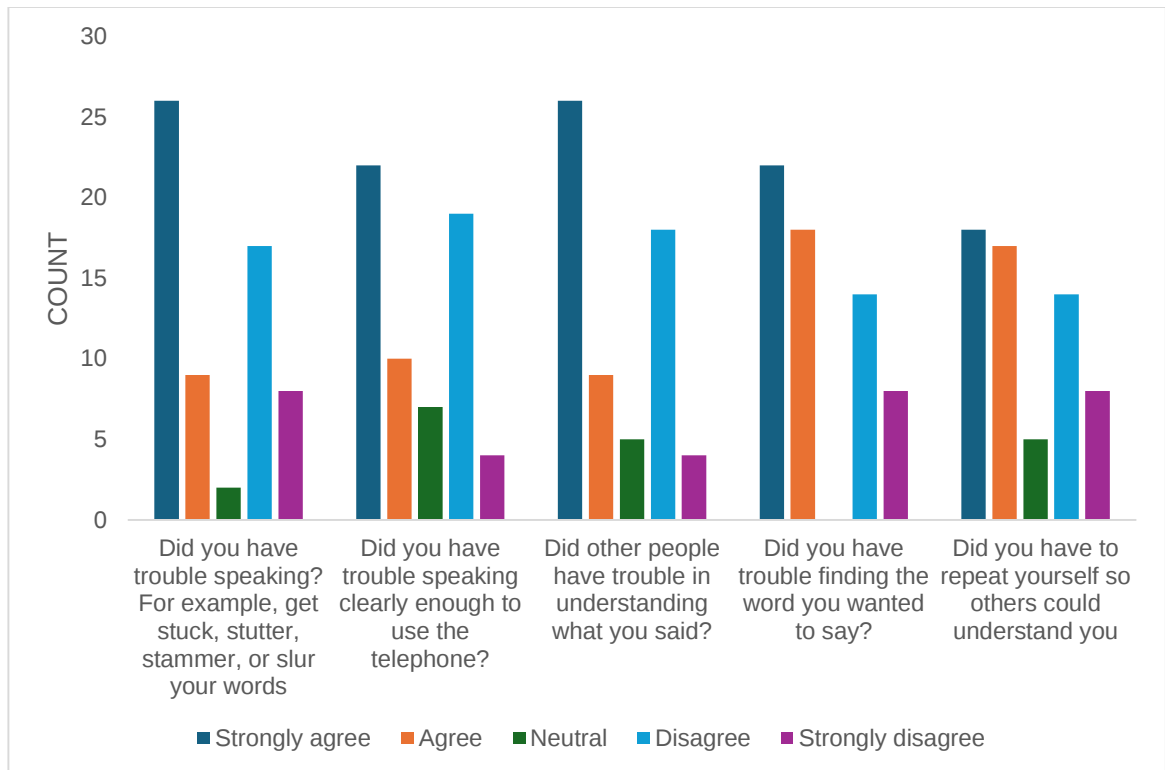


Figure 8: Language and speech impairments

4.4.4 Mobility domain analysis

A significant portion of the participants 56(90.3%) reported having trouble walking and climbing stairs, highlighting this as a major concern for mobility. Additionally, the participants indicated issues with balance 45(72.3%), getting out of a chair 45(72.3%) and standing 38(61.3%). Only 14(22.5%) participants did not experience difficulty in mobility. Figure 9 sheds light on the challenges faced by participants in regaining mobility after stroke

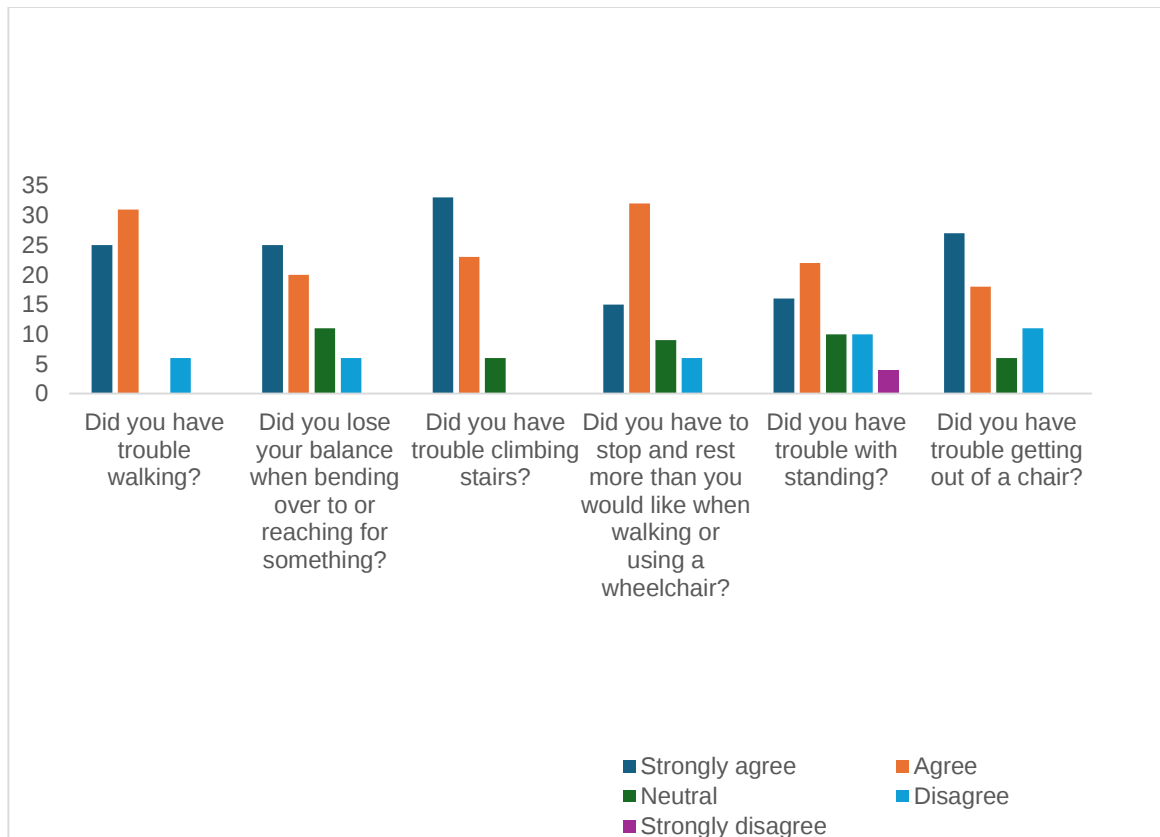


Figure 9: Mobility challenges distribution

4.4.5 Mood domain analysis

A significant 30(48.3%) participants strongly agreed to feeling discouraged about their future although interest in other people of activities was neutral for most of the participants. Over a third of participants 23(37%) reported a lack of interest in others or activities, while nearly a quarter 16(26%) indicated feeling withdrawn from others although their confidence remained. Interestingly, the data suggests that loss of appetite was not a widespread concern. 43(69.4%) of the participants reported no reduction in their appetite since after the stroke. Figure 10 delves into the emotional impact of stroke on participants.

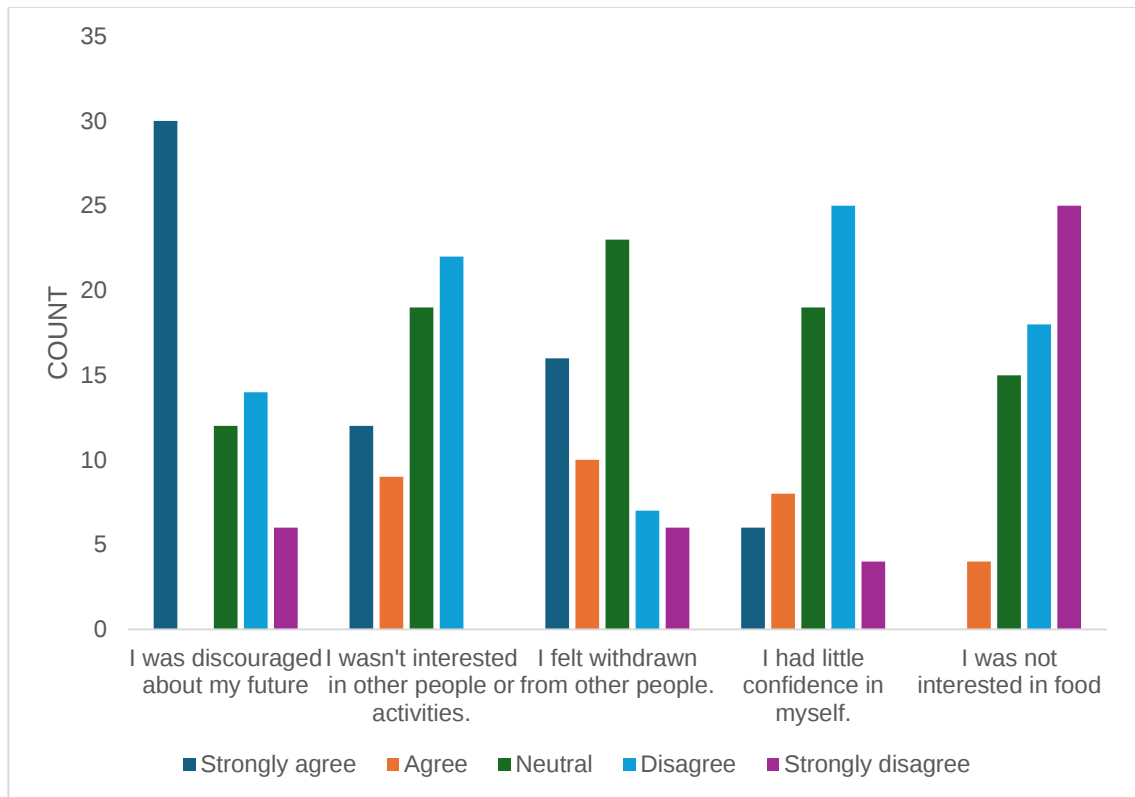


Figure 10: Mood of participants

4.4.6 Personality domain analysis

Most of the participants 43 (over 69.4%) did not perceive a major personality change, their response was neutral. Only 15 (24.2%) of the participants agreed to their personality changing since after the stroke. A significant portion of participants over 41 (66.1%) endorsed experiencing some level of irritability after their stroke whilst a smaller group 22 (35%) reported being impatient with others. Figure 4.11 explores the emotional impact of stroke on participants' personalities.

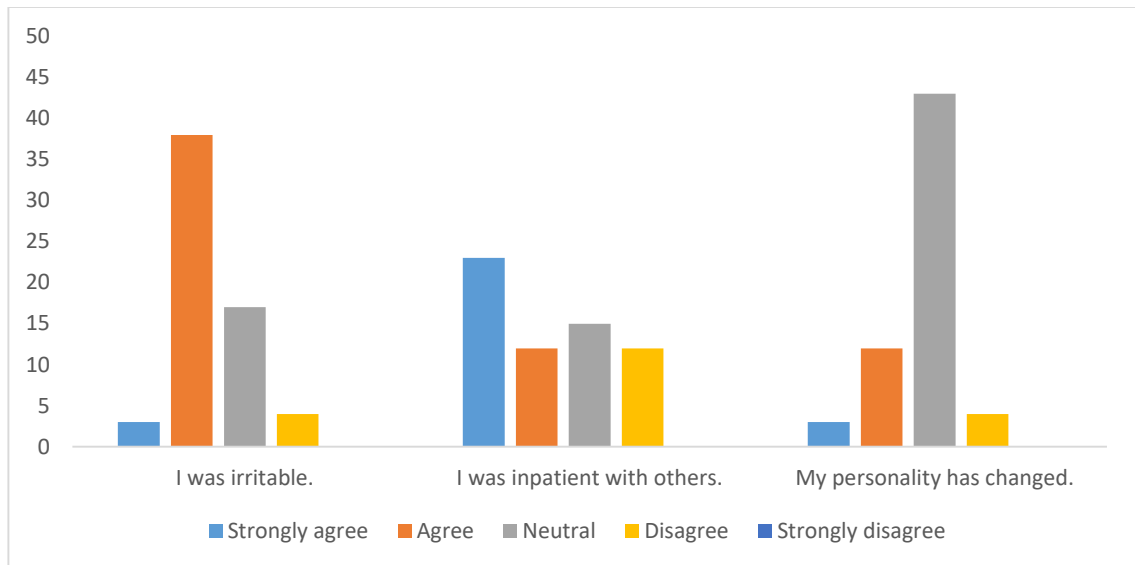


Figure 11: Personality responses of participants

4.4.7 Self-care analysis

The data reveals that a significant portion of participants required assistance with some aspects of their basic day to day proceedings. In terms of basic meal preparation, 45(72.6%) of participants reported needing help with the preparations whilst 27(43.5%) required assistance with eating itself. Only 24(38.7%) of the participants did not need help with bathing or showering. About a quarter of the participants 16(25.8%) also responded as not needing help with using the toilet, leaving the majority being dependent with most of the activities of daily living. Figure 12 examines the impact of stroke on participants' ability to perform Activities of Daily Living (ADLs) (self-care)

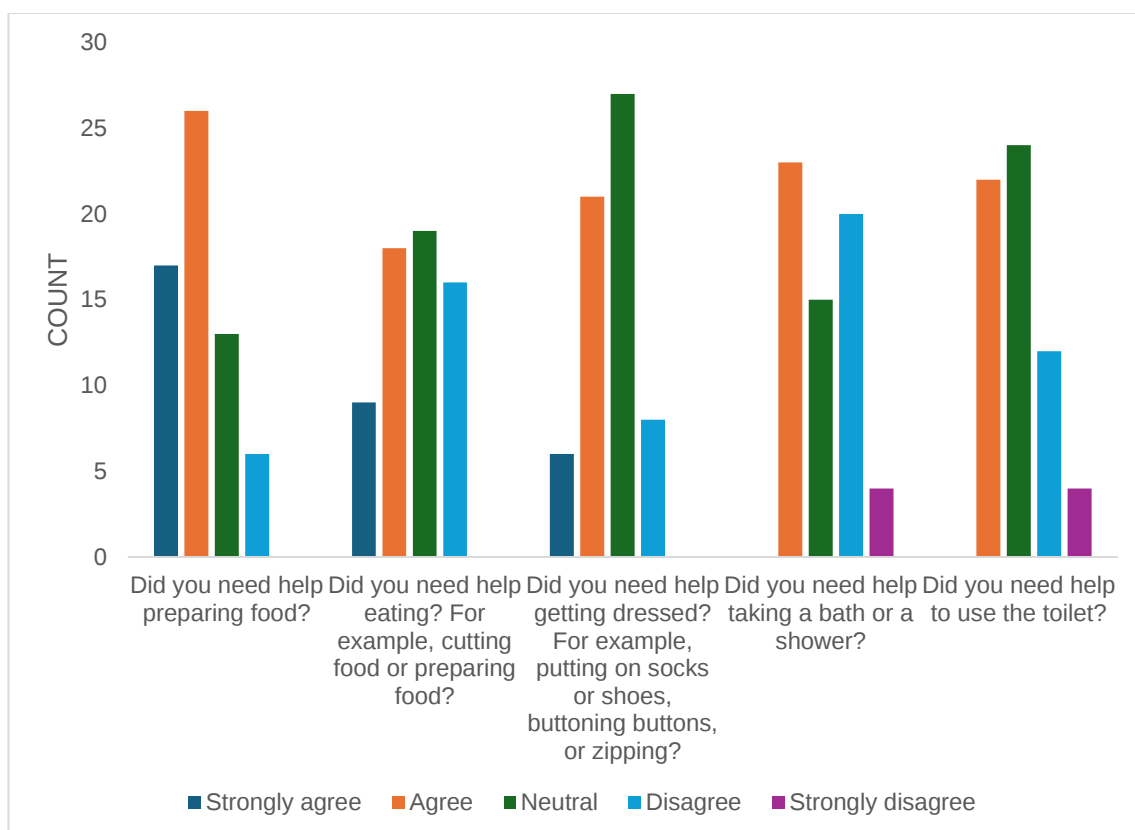


Figure 12: Self-care challenges faced by participants

4.4.8 Social Roles domain analysis

The data reveals a significant impact that stroke has of restricting participation in society. Majority, 52(83.9%) indicated their physical condition interfering significantly with their social life. Nearly three quarters 46(74.2%) reported not going out as often as they would like, and a similar number reported engaging in hobbies and recreational activities for shorter periods than desired. Most of the participants 46(74.2%) also noted that they engaged in sexual activities less often than they desired. Figure 13 explores how stroke affects participants' social lives and engagement in activities.

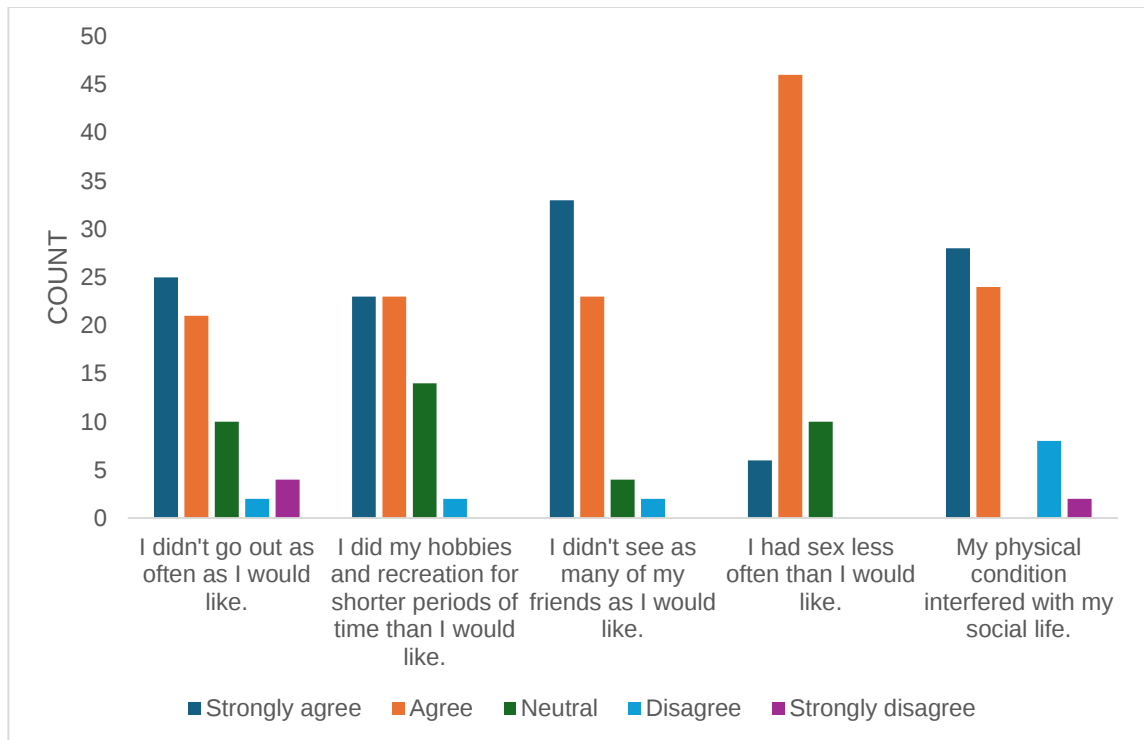


Figure 13: Effect of stroke on social roles

4.4.9 Thinking domain analysis

There were no participants that strongly agreed with difficulty concentrating but 33(53, 2%) endorsed experiencing some level of concentration difficulty. Memory was a challenge to 29(46.8%) of participants as they reported having some trouble remembering some information. Figure 14 sheds light on the potential cognitive challenges faced by participants following stroke.

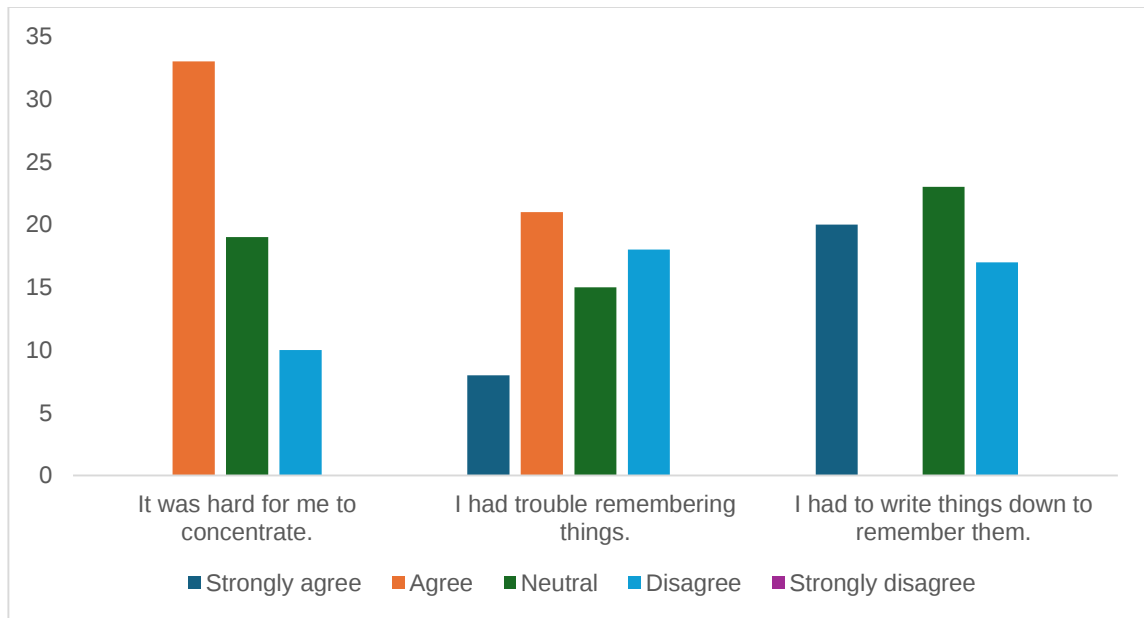


Figure 14: Thinking challenges faced by participants

4.4.10 Upper Extremity Function analysis

The data reveals significant challenges with hand use for most of the participants as they strongly agreed to each of response. Majority of the participants 40(64.5%) reported difficulty with writing or typing, A similar number of participants 30(48.4%) had challenges with buttoning buttons and zipping a zipper whilst 26(41.9%) had challenges with opening a jar. Figure 15 examines how stroke affects participants' use of their upper limbs and fine motor skills.

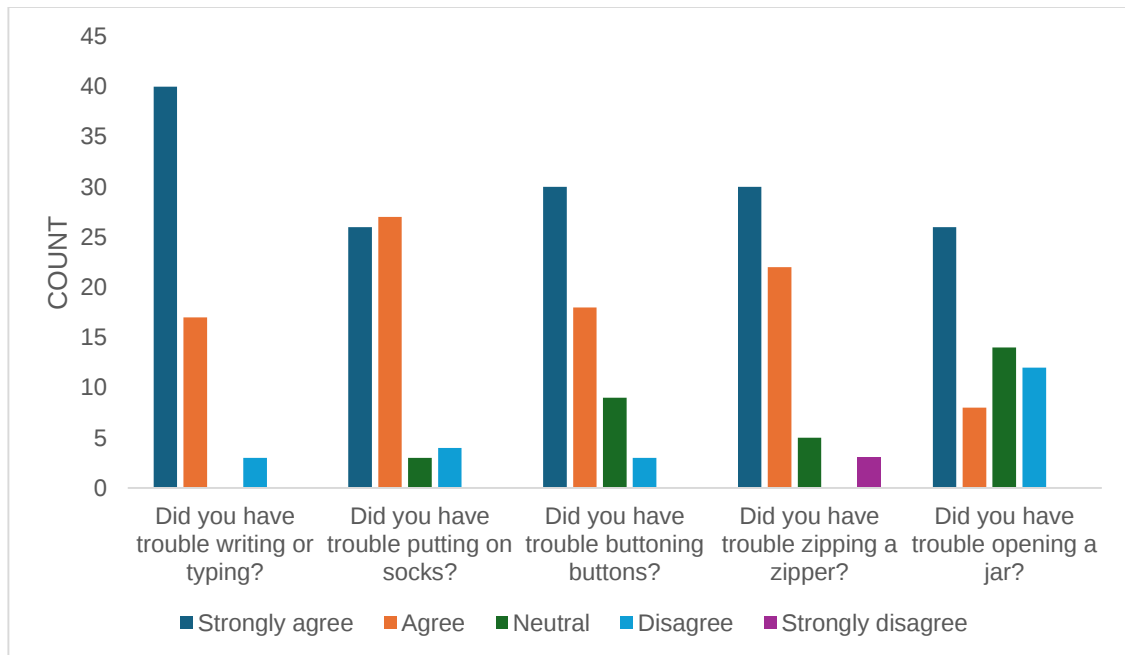


Figure 15: Upper limb use and fine motor skills.

4.4.11 Vision analysis

While the data in Figure 16 below suggests vision problems are not the most prevalent concern for participants following stroke, a noteworthy portion did report some visual difficulties. Over 26% of participants endorsed having trouble seeing the television well enough to enjoy shows, potentially impacting leisure activities. About 25% of participants reported difficulty reaching for things due to poor eyesight, and a similar number indicated experiencing problems seeing things off to one side.

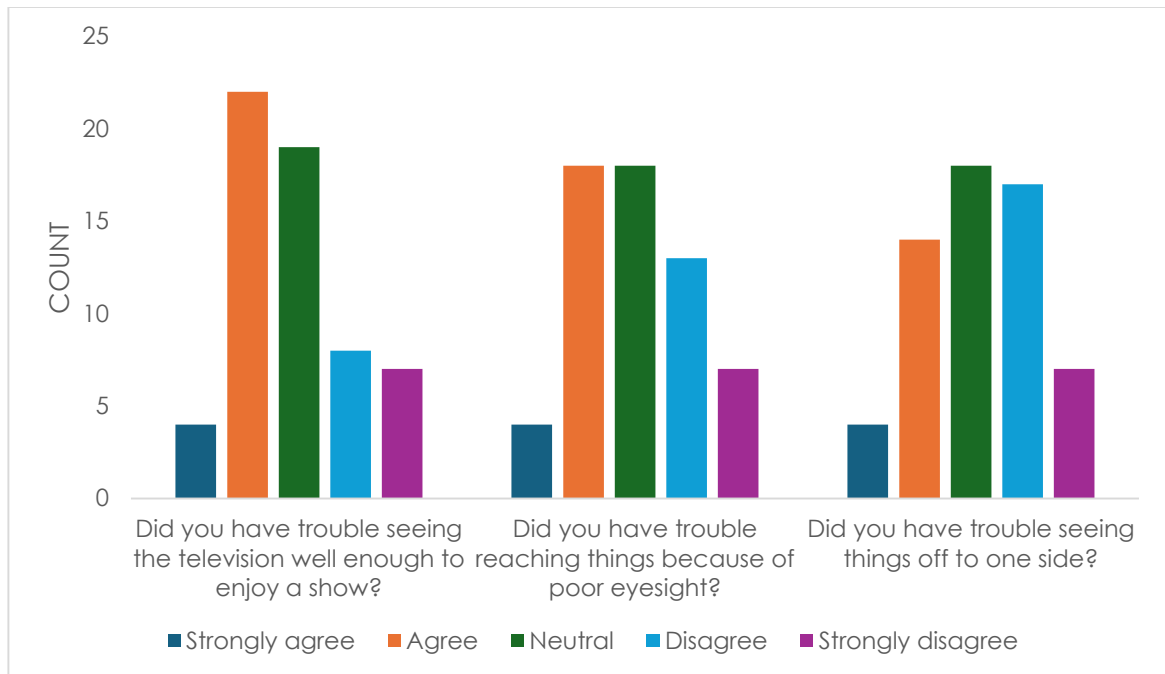


Figure 16: Vision analysis of participants

4.3.12 Work/Productivity

The data reveals a significant impact, with over 54% of participants reporting difficulty performing daily housework and over 63% struggling to finish tasks they initiate. Furthermore, the data suggests that stroke can be a barrier to returning to previous work. Over 57% of participants indicated difficulty performing their past work duties. Figure 17 sheds light on the challenges faced by participants in managing daily tasks and work-related activities following stroke

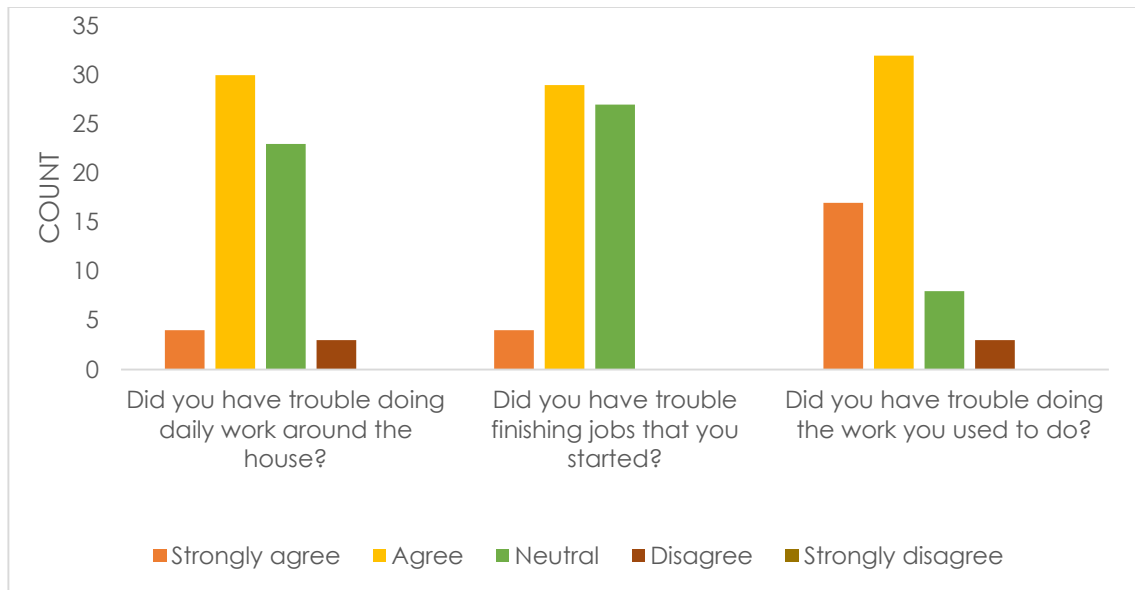


Figure 17: Effect of stroke on work and productivity

Participants who had more than 20 physiotherapy sessions had relatively higher SSQOL scores than those that had less physiotherapy sessions Figure 18 illustrates the relationship between SSQOL scores and number of physiotherapy session.

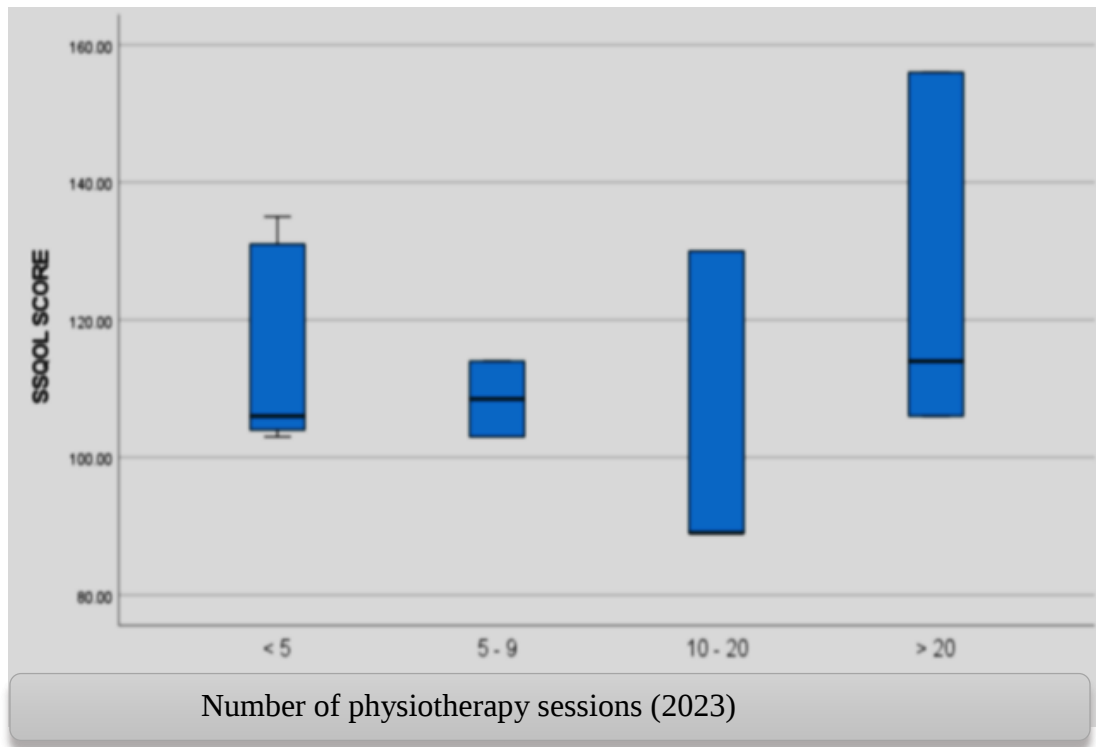


Figure 18: Relationship between SSQOL score and number of physiotherapy sessions

Summary

62 participants were enrolled into the study. 58(93.5%) had missed their physiotherapy sessions because of economic costs (56%), (36%) because of escort availability and (15%) pain/depression. Over 50% of the participants had less than 5 physiotherapy sessions with 71% reporting adherent to their given home exercise programs. The minimum SSQOL score was (89), the maximum SSQOL score was (156), whilst the mean score (114). The domain scores ranged from 1-5, the average domain scores were calculated the domains with the

highest scores were vision (3.8), language (3.3), mood (3.2) and thinking (3.0). The domains with the lowest scores were upper extremity function (1.3), social roles (1.8) and, mobility (2.0). SSQOL scores had statistical significance with number of physiotherapy sessions with $p=0.024$ and missing physiotherapy sessions $p= 0.008$. Higher scores were seen in the singles group and in participants who had more physiotherapy session. Gender, marital status, history of smoking and number of physiotherapy sessions had statistically significant results that affected SSQOL scores.

CHAPTER 5: DISCUSSION

5.1 Introduction

This chapter discusses the study findings and makes comparison with existing literature on role of physiotherapy on stroke QOL profiles. The researcher will discuss the study findings whether they fulfilled the study objectives and provide conclusions to the hypothesis. The chapter also provides critical recommendations to the Manicaland province MoHCC directorate and its DHEs. The researcher will give suggestions for areas for further study.

5.2 Characterizations

This study had slightly more men 53.2% compared to women 46.8%. Studies conducted in Malawi, (Heikinheimo et al; 2012), have also shown a smaller percentage of females compared to males. A retrospective study in Zimbabwe that investigated stroke clinical characteristics of admitted patients at tertiary hospitals had 164(37%) males and 283(63%) females (Kaseke et al., 2017). Women are said to have better health seeking behaviour than men and this could explain why the study had more female participants than males. Similarities in the stated studies were that over two thirds of the participants were married, including in this study.

The mean age of stroke in this study was 42, ranging from 29-98 years. An older study by Matenga in 1984 in Zimbabwe had a mean age of stroke survivors of 64 years, similar to that found by Kaseke et al in 2017. This study showed that stroke was affecting younger ages as compared to the other studies. A general demographic transition is noted as the mean age of stroke onset has moved from (65+years) to 50 years and below. Stroke was usually thought to be an old age disease, but recent researches have led to the conclusion that this is no longer

the case This can be explained by the increased burden of NCDs and their comorbidities (Feigin et al., 2016).

Although stroke incidence is often closely associated to hypertensive disorders, most participants 23(36.6%) participants in this study had hypertensive disorders. This result is similar to that done in Ethiopia (Mulugeta et al., 2020) which had 56(34%) with hypertension and on treatment. The overwhelming predominance of hypertension as a stroke risk factor in the region highlights its pivotal role as the single most modifiable determinant of cerebrovascular events. This epidemiological pattern reflects a perfect storm of Healthcare System Limitations and physiological severity. Hypertension detection rates are below 50% in most sub-Saharan African countries, with only 1 in 5 diagnosed patients achieving blood pressure control (ASA, 2014). Without regular reviews, patients can be taking their hypertensive medications and still have uncontrolled hypertension. There is also an average 2.3-year delay between hypertension onset and diagnosis

In the same study, hypertension, dyslipidaemia and arterial fibrillation were statistically significant risk factors for stroke. This discovery, which was made by Matenga et al. in 1986, emphasizes how important abnormalities with lipid metabolism are to cerebrovascular conditions. The study highlighted the significance of cholesterol control in stroke prevention strategies by pointing out that despite high blood pressure being the primary cause of stroke, dyslipidaemia posed a significant and independent threat.

Although this study did not investigate differences on the type and side of stroke survived, hypertension is more common in patients who have had an ischemic stroke, according to some studies conducted in Europe (Winstein et al., 2016), and ischemic strokes are were

more prevalent (53%) than haemorrhagic strokes (33.3). The reason why more females were impacted on the left side in (Olaleye & Lawal, 2017) this study is unclear but anatomical or genetic variations between the different genders call for more investigation. In developing countries, the type of stroke is usually undetermined because of lack of resources and limited infrastructure at the health centres. The type of stroke and the side which the stroke happens have a great impact on a stroke survivor's impairments and recovery. The average age of stroke onset of 40 in this study is much lower than that of sub-Saharan countries and that of studies conducted in Europe.

It is acknowledged that growing older is linked to more co-morbidities, which have been shown to lower functional prognosis following a stroke. This has been made worse by the global diabetes epidemic and the rising incidence of cardiovascular risk factors in individuals (Feigin et al., 2016). In this study, risk factors of smoking and the existence of a pre-existing condition identified statistically significant for stroke and 36.5% of the participants had hypertension whilst 28.6% had diabetes. This is similar with other studies (Boehme et al; 2017) which cited hypertensive disorders as the major factor associated with strokes. Most of the participants in this study were the economically active (40-60) years and work productivity was greatly affected with most of them failing to go back to their former work.

5.3 Determinants of adherence

Socio-economic factors can play a very crucial role in the rehabilitation process of individuals. In this study over 90 % of the participants had missed a physiotherapy session with majority of them citing cash constraints in terms of transportation costs and paying for the physiotherapy session.

Only 19.4% of the participants were pensioners and could access rehabilitation services for free at the hospital but this same fraction of individuals reported failing to access rehabilitation services for lack of someone to escort them.

Older adults (≥ 65 years) tend to have poorer physio adherence due to decreased mobility, cognitive decline, and comorbidities and need to be escorted often times. This points out the relevance of adequate support structures for patients to be able to utilise rehabilitation services especially for the elderly. Strong social support from family and caregivers across all ages also can improve adherence.

Although level of education, employment status and area of residency was not investigated in this study, higher education levels can also be associated with better physiotherapy adherence as individuals are more likely to understand the importance of rehabilitation and follow the instructions adequately (Vive, Af Geijerstam, et al., 2020). Patients' adherence behaviours during clinic-based physical therapy sessions should not only be measured by clinic attendance. A study by Mlambo (2020) found 2 factors to be statistically significant, namely belief in the exercise program and improvements seen since onset of rehabilitation.

To assess patients' adherence behaviours, several observational techniques have been developed which include physiotherapist's knowledge of the patient, clinical symptoms, rehabilitation progress and behavioural observations (Boehme et al., 2017). Over 90% of the physiotherapists in this study gave patients a home exercise program. Effective communication together with regular follow-up and monitoring between healthcare providers with the patients and their caregiver can improve physiotherapy adherence.

Women tend to have better physio adherence than men, possibly due to stronger social support networks and greater health-seeking behaviour but in this study, men had relatively higher scores for quality of life. Stroke recovery takes a long time and most survivors tend to lose motivation and reduce compliance to the rehabilitation if they do not see notable progress. A supportive environment also in terms of adequate space and equipment, can facilitate physiotherapy exercises.

In this study, only 6.5% of the participants cited pain and failure to perform an activity as personal factors that affected adherence. Mental state and depression were however not assessed in this study but showed to affect motivation and compliance to home exercises (Vive, Af Geijerstam, et al., 2020),(Kobylańska et al., 2019), (Winstein et al., 2016). These studies also highlighted the great importance of tailoring physiotherapy programs according to the patients personal goals and individual pain tolerance in terms of duration and intensity of the treatment sessions whilst considering each patients limitations.

Other personal factors can also affect adherence and effectiveness of treatments. In this study, 4(6.5%) of the participants acknowledged that they had depression and pain. (Khalid 2016) also noted in his study that 60 % of stroke survivors had depression and that majority of their care givers were also depressed, overwhelmed and financially burdened. Caregivers can help motivate the patient to be compliant to their home exercise program and thus help stroke survivors adhere to their treatments whilst at home. If both the caregiver and stroke survivor are demotivated, this can also affect the effectiveness of the rehabilitation process. The

burden of psychological problems for both the patients and for caregiver are often less prioritised compared to physical challenges.

The support structure of family and religion are core in our society and have been shown to affect interventions and recovery. Availability of community resources, such as rehabilitation centres and support groups, can impact physiotherapy adherence and recovery, but there is a great need to include the multidisciplinary team in the care of stroke survivors.

5.4 Stroke Quality of Life profiles

The American Stroke Association proposed a structured classification of post-stroke recovery, dividing the process into four distinct phases based on clinical and functional progression, the hyper acute or acute phase (0–24 hours), the early rehabilitation phase (24 hours until 3 months), the late rehabilitation phase (3–6 months), and the chronic phase (6 months and after). The hyper acute/Acute Phase (0–24 hours) is a critical window that focuses on emergency medical interventions, such as thrombolysis or thrombectomy, to minimize brain damage and stabilize the patient. Early diagnosis and treatment during this phase significantly influence long-term outcomes. Medical interventions, such as thrombolysis or thrombectomy, to minimize brain damage and stabilize the patient. Early diagnosis and treatment during this phase significantly influence long-term outcomes. Majority of the participants did not have CT or MRI scan post stroke showing the unlikely contextual preparedness for thrombolysis.

In a hospital-based prevalence study in Ethiopia, the most frequent clinical presentation was focal neurologic impairment (67.9%), which was followed by coma or disturbed mental status (29.6%) (Mulugeta et al., 2020). In contrast, another study found that hemiplegia was present in a larger proportion (61%) of stroke patients (Vive, Af Geijerstam, et al., 2020). Different types of stroke and where the stroke happens have different outcomes and clinical presentations. The location and type of deficit can help pinpoint the area of the brain that is affected. This study did not investigate quality of life profiles specific to the stroke type and subtypes, hence further evaluations could not be deduced. Each stroke is therefore different and impacts each individual's quality of life differently.

Stroke survivors who are less mobile and bedridden had higher risks of suffering comorbidities related to stroke and or disability (Olaleye & Lawal, 2017). This study had limitations in that convenient sampling was done using participants that could visit the rehabilitation department for treatment sessions. Those with severe mobility challenges, who were bedridden at home and unable to travel to the hospital were not included. However, a study by (Chikanya;2023) investigated home based care for stroke survivors in rural Zimbabwe and identified that there was reduced knowledge among caregivers on how to care for the survivors. There was a high incidence of chest and urinary infections, which generally showed the survivors low functional level.

In this study, language, vision and thinking had higher domain scores. These deficits coincided with left sided strokes. The study by (Kaseke et al; 2017)that had 435 participants 40% had left sided strokes , 52% had right sided strokes and 8% had bilateral strokes. Similar with other studies, right sided strokes are more common than left sided strokes. Although the specific side of stroke was not investigated in this study, left sided strokes are often associated

with injury to areas in the brain that are responsible for cognition (memory, attention and problem solving), language (speaking and understanding) (Zillmer; 2001). The presentation of the results from the study suggest also that right sided strokes were more common thus participants scored higher for vision, thinking and language domains.

The right hemisphere of the brain controls spatial awareness and emotional regulation which implies that right sided strokes affect emotional regulation and behaviour, leading to changes in mood, personality and impulsivity (Kertesz;2007). To the authors' knowledge, these changes can be progressive and will show effect and changes over a longer period of time. In this study, most of the participants had had a stroke in 2023 and thus scores in the domains associated with right sided strokes could not yet fully recognised.

Males had higher SSQOL Scores than females and the mean score was 112. Another study using SSQOL scores had a higher mean score of 164, and 68 % of the participants were males. This same study investigated psychological limitations separately and found that 60 % of the participants had depression (Khalid et al; 2016).

A study by Arief et al (2022) showed that physical function was significantly correlated to quality of life among stroke patients. Using validated assessment tools, the researchers found that higher levels of physical mobility and functional independence were strongly associated with improved quality of life scores across multiple domains, including physical health, psychological well-being, and social relationships. These findings align with established biopsychosocial models of health that emphasize the interconnectedness of physical capacity and overall life satisfaction. The study's results suggest that rehabilitation programs focusing on physical function improvement may have far-reaching benefits beyond mere mobility

enhancement, potentially serving as a valuable intervention for boosting patients' holistic well-being and perceived life quality.

There were statistically significant SSQOL SCORE mean difference between gender, marital status, history of smoking and number of physiotherapy sessions that the participants had. Those Identified as single in this study had significantly higher SSQOL scores than those who were married. This can be explained by the contextual social support structures. Single individuals might have more determination to gain independence to be functionally independent since they have to rely more on themselves than others whilst those with spouses to assist them can develop some dependency syndrome.

Mobility, Energy, family roles, social roles, and upper extremity function where the domains with very low average SSQOL scores in this study. Reduced upper extremity function limits hand use in personal self-care and in activities of daily living like bathing, dressing, toileting and feeding/ meal preparation, social participation and productivity with work or other recreational activities. Regardless of the type and side of stroke is often associate with hemiparesis (weakness) on one side, hand and foot or both thus limiting mobility in the feet and hand use. Patients are therefore limited on tasks that they can perform and this can then lead to isolation and depression (Kobylańska et al., 2019).

Interestingly, participants reported reduced mobility and energy, but appetite was not affected, and yet there are preexisting comorbid conditions (hypertension, diabetes and HIV) that exposed them to developing the stroke. These findings raise important public health concerns regarding the growing burden of non-communicable diseases (NCDs) in vulnerable populations. As noted by Knight et al. (2022), the intersection of multiple chronic conditions

creates a synergistic risk profile that substantially elevates stroke susceptibility. The observed clinical presentation (marked by functional impairment without accompanying appetite changes) may represent a distinct phenotype warranting targeted intervention strategies. This pattern underscores the urgent need for integrated healthcare approaches that address both primary stroke prevention and comprehensive management of multimorbidity.

Reduced participation in social activities, which is limited by mobility can also be a trigger to isolation and depression (Winstein et al., 2016). The Chronic Phase of stroke recovery, (6 months and beyond) is marked by plateaued recovery. This phase prioritizes maintenance of gains, secondary stroke prevention, and compensatory techniques for persistent impairments. Some patients may experience late functional improvements during this phase though the focus shifts to quality-of-life enhancements. Most stroke survivors are not adequately informed about this phase of recovery and fail to accept the acquired disability leading to depression and isolation.

The study by (Mulugeta et al., 2020) showed that the medical management for 77(45%) of the participants in that study was antibiotic treatment. This substantial proportion highlights the critical role of antimicrobial treatment in the management of the condition under investigation. The frequent utilization of antibiotics suggests either a high prevalence of bacterial infections among the study population, common use of prophylactic antibiotic regimens, or empirical treatment approaches in cases of diagnostic uncertainty. In the same study, the most common comorbidities of the stroke survivors were infections 38(23.5%) and aspiration pneumonia 31(19.8%). This shows that stroke survivors are at risk of infections especially if mobility is reduced. In this study, participants scored low on mobility and energy which raises great concern.

The study by (Kaseke et al, 2017) identified 41(16%) aspiration pneumonia as a common complication and 63(14%) HIV infections as a risk factor for stroke. This study also investigated HIV as a pre-existing condition and it was found as a statistically significant risk factor for stroke. 8(16.7%) participants had HIV. HIV alone is associated with other comorbidities and hence it would be necessary to investigate the effect of HIV on stroke incidence since the incidence is high.

The importance of vocational rehabilitation programs to assess a survivor's capabilities and potential for returning to productivity and recreation are therefore very fundamental. These programs can help identify suitable work options, recommend modifications to existing job roles, or provide training for new skills if necessary to help stroke survivors be socially integrated again in the community.

The study by McGlinchey in 2019 showed that patients that had 45 minute physiotherapy sessions each day for patients 0-3 months after the stroke, linear regression models of QOL outcome and physiotherapy adherence demonstrated significant positive relationships. This relates to the findings in this study as participants with >20 physiotherapy sessions had the highest SSQOL scores. However in our context, this guideline of therapy of 45 minutes a day everyday cannot be practically met, especially for outpatients at a public facility. This can be hindered by limited resources and infrastructure at the facilities as we need rehabilitation centres that are well equipped and adequate and well-motivated staff who will be offering the services. By understanding the relationship between physiotherapy adherence and QOL profiles after stroke, healthcare providers can develop targeted interventions to improve outcomes and enhance the overall quality of life for stroke survivors.

Although physiotherapy is critical in the management of stroke, high SSQOL scores cannot be attributed to physiotherapy alone. This study emphasized the role of physiotherapy, but the role of speech, occupational and recreational therapy is also very vital in the rehabilitation of stroke patients. Through occupational and physiotherapy therapy, 60% of patients experienced clinically significant recovery in their upper limbs after task-specific training, such as constraint-induced movement therapy, which enhances cortical reconfiguration (Winstein et al., 2016), (McGlinchey et al., 2019). Stroke affects many domains and hence collaborating with healthcare professionals from various disciplines to provide comprehensive care across all domains improves the quality of life profiles of stroke survivors.

5.5 Conclusions

A Cross-sectional analysis on quality of life profiles and the role of physiotherapy adherence on patients with sequel of stroke managed at VCPH for the period January 2023 to January 2024 was done. It revealed that hypertension and smoking were statistically significant modifiable stroke risk factors associated with stroke. Family and Religion played a major role as a social support structure. Mobility, energy, social and family roles were the most affected domains for quality of life profiles. Upper extremity function affected Activities of daily living and had the lowest scores. Physical limitations from the stroke limit the stroke survivors' participations in social life, productivity in work and can lead to personality and mood changes. Addressing determinants like health costs/ insurance, access to rehabilitation services, health provider communication and caregiver education for social support can help improve physiotherapy adherence post-stroke. Context-specific interventions, such as culturally sensitive education programs, community-based rehabilitation initiatives, and

mobile health technologies, may be effective in promoting physiotherapy adherence. By addressing Mobility, and psychological domains, and incorporating patient-centered care, interdisciplinary collaboration, and family involvement, physiotherapy can significantly improve QOL profiles for patients post-stroke.

5.6 Recommendations

Table 5: Recommendations

Area	Recommendation	Responsible person
Health infrastructure and resources	- Integrated ICF framework in the assessment and management of long term condition for a multidisciplinary approach - Increase staff capacity at the rehab department	- MoHCC Health and Human Resources - Victoria Chitepo Provincial Hospital
Service delivery	Intergraded the use of outcome measures like the SSQOL in stroke rehabilitation to better understand individual patient needs.	
Non communicable disease registry	- There has been limited initiative to have this registry online. Districts need to be trained and encouraged to do the entries. The information already exists in paper registers, but is not fully detailed and subject to inaccuracy. - There is need to develop an NCD surveillance system, and not just for CDs since Zimbabwe faces a double burden of both CDs and NCDs. This will help to conduct effectiveness	MoHCC Health Informatics and Health information department

studies, risk factor identification, determination of incidence and related factors for the NCDs.

Stroke factors	• Individuals should be encouraged to mind their diets, increase physical activity, reduce salt intake and have regular health checks. • Special attention should be given to patients who are diabetic and hypertensive, as they show a higher risk of developing a stroke	• Health Promotion • Epidemiology and disease control department
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5.7 Areas for further study

The researcher recommends studies that can investigate SSQOL scores that are taken at different times for comparison to assess changes in the quality of life profiles of the stroke patients.

Studies on the role of other rehab personnel, like speech therapists, occupational therapists, should also be conducted. Studies that analyse the utilization of physiotherapy and or multidisciplinary team in the continuum of stroke care at the referral health care centres are also recommended.

Guidelines for Adult Stroke Rehabilitation and Recovery in Zimbabwe can also be investigated and set to be specific to our context. Physical activity patterns of acute stroke patients managed in a rehabilitation focused stroke unit can also be done including investigations of the clinical characteristics and outcomes of patients with stroke admitted at the hospital to get detailed demographics and risk factors that are contextual. The general

prevalence and incidence of stroke is assumed and there is a gap in literature that gives room for further studies on this. The effect of HIV on incidence of stroke is also an area worth investigating more.

There are a lot of gaps in literature that relate to stroke, role of rehabilitation, magnitude, characteristics and outcomes of the stroke and utilisation of the existing services.

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Appendix 1: English Informed Consent

TITLE OF STUDY : An analysis of physiotherapy adherence effect on quality of life in patients with sequelae of stroke managed at Victoria Chitepo Provincial Hospital in Mutare.

Good morning/ afternoon. I am Trish Tinotenda Mtetwa, a student at Africa University. I am conducting a study seeking to analyse physiotherapy adherence effect on quality of life in patients with stroke managed at Victoria Chitepo Provincial Hospital in Mutare. This form gives you information about the study and will be used to document your willingness to take part if you choose to do so.

PROJECT DISCRIPTION

The purpose of the study is to obtain an analysis of the effect of adherence to physiotherapy on stroke quality of life in Mutare. Feedback from the participants is obtained through the use of a questionnaire. The study is for academic purposes only. The information from this study will assist relevant line ministries e.g. Victoria Chitepo Provincial Hospital and Ministry of Health and Child Care at large to design effective preventive programs for diabetics and the population at large.

PROCEDURES AND DURATION

The eligible participants for this study are stroke patients. You have been selected as a possible participant because you meet the stated selection criteria. If you decide to participate, you will be asked to answer a structured questionnaire. It will take about 20 minutes for you to finish answering the questions.

BENEFITS, RISKS AND DISCOMFORTS

There are no direct benefits to you for participating in this study. I am hoping that findings from this study will be used to improve management of diabetes mellitus. The risks of participating in this study are minimal. It is possible that you may feel uncomfortable with some of the questions I will ask you. You can choose to skip or to discontinue the interview if you feel uncomfortable.

CONFIDENTIALITY

If you participate in this study, your personal details will not appear on the questionnaire. Any information that is obtained in connection with this study that can be identified with you will remain confidential and will be disclosed only with your permission. You will be assigned a study participant identity number which will be used to identify the questionnaire. All study records will be kept in secure, locked filing cabinets, separate from any information that identifies you personally like this consent form. Your name will not be used in any reports or publications that may arise from this study. Your details may be released to authorized individuals if required by the law. Under some circumstances, the University or Medical Research Council of Zimbabwe may need to review records for compliance audits only.

ADDITIONAL COSTS

There will be no additional costs to you because of your participation in this study except those related to the time taken while participating in this study.

VOLUNTARY PARTICIPATION

Participation in this study is voluntary. If you decide not to participate in this study, your decision will be respected and will not affect your future regular health care services and employment status in any way. If you decide to participate, you are free to withdraw your consent and to discontinue participation at any time without penalty.

AUTHORIZATION

Before you sign this form, please ask any questions on any aspect of this study that is unclear to you. You may take as much time as necessary to think it over. Your signature indicates that you have read and understood the information provided above, have had all your questions answered, and have decided to participate.

Signature/fingerprint of Participant or legally authorized representative Time

Relationship to the Participant

Name of participant Obtaining Consent Signature Date

For any queries, contact information

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Appendix 2: Shona Informed consent

ZITA RETSVAKURUDZO: Kuongorora kubatsira kwe Physiotherapy muhupenyu mevarorarama ne *stroke* pa Victoria Chitepo Provincial Hospital ma Mutare.

Mangwanani/ masikati. Ini ndinonzi Trish Tinotenda Mtetwa. Ndinozidza paAfrica University. Ndiri kuita tsvakurudzo yekuongorora kubatsira kwe Physiotherapy muhupenyu mevarorarama ne *stroke* pa Victoria Chitepo Provincial Hospital ma Mutare. Fomu rino richakupai zvetsvakurudzo iyi uyezve richashanda kuratidza kuti mapinda mutsvakurudzo iyi nokuda kwenyu.

CHINANGWA CHETSVAKURUDZO

Chinangwa chetsvakurudzo ino kuongorora kubatsira kwe Physiotherapy muhupenyu mevarorarama ne *stroke* pa Victoria Chitepo Provincial Hospital ma Mutare. Tsvakurudzo ino ndeyekuitira dzidzo chete. Zvichawanikwa mutsvakurudzo zvichabatsirawo vebazi rezveutano muZimbabwe, nevezveutano nepachipatara kuti vakwanise kugadzira zvirongwa zvinobatsira vane dambudziko re *stroke*.

ZVICHAITWA NENGUVA ICHASHANDISWA

Tichasarudza vanhu vane shuga iri kutorapiwa. Imi masarudzwa kuti mupinde mutsvakurudzo nekuti munoenderana nezviri kutariswa. Kana masarudza kuti munoda kuti mupindewo mutsvakurudzo muchakumbirwa kuti mupindure mibvunzo. Zvichatora maminiti enyu makumi maviri enguva kuti mupindure mibvunzo yose.

ZVAMUCHAWANA, NJODZI INGAVAPO, NEZVINGASAKUFADZAI

Hapana zvamuchawana sedunga munhu patsvakurudzo ino. Ndinovimba zvichabuda mutsvakurudzo zvichaita kuti kurapwa kweshuga kuvandudzike. Njodzi mutsvakurudzo ino ishoma shoma. Zvinogona kuitika kuti munogona kusafarira mimwe mibvunzo ingabvunzwa. Munokwanisa kusarudza kusapindura mibvunzo isingakuitirei kana kusarudza kubuda musarudzo kana mukaona zvisingakuitirei.

KUVANZIKA KWEZVICHAWANIKWA MUTSVAKURUDZO

Kana mapinda musarudzo zita renyu hariwanikwe pabepa remibvunzo. Ruzivo rwezvenyu ruchawanikwa patsvakurudzo ino ruchange rwakavanzwa uye runobuditswa kana imi matendera chete. Zvinoshandiswa mutsvakurudzo ino zvichange zvachachengetedzwa zvichivharirwa. Zita renyu hariiswe pane zvichanyorwa zvetsvakurudzo. Zvinechekuita nemi zvinogona kupihwa kune vanobvumirwa nemutemo kana zvadiwa pamutemo. Dzimwe nguva chikoro cheUniversity kana bazi rezvetsvakurudzo dzezveutano vangangoda kutarisa zvakanikwa.

MURIPO KWAMURI

Hapana mutengo kana muripo uchave kwamuri kunze kwenguva yamuchadyirwa pakutaurwa nemi.

KUPINDA NESARUDZO YENYU

Kupinda mutsvakurudzo iyi hakumanikidzwe. Kana mukasarudza kuti hamudi kupinda mutsvakurudzo iyi, hazvina chazvichakanganisa pane zvinhu zvose pakurapwa kana kushanda kwenyu. Kana masarudza kupinda munokwanisa kusarudza kuti hamuchadi chero nguva pasina mutongo.

KUBVUMIDZA

Musati masaina gwaro rino bvunzai mubvunzo wamungada pane zvamusina kunzwisisa. Munokwanisa kutora nguva yamunoda kana muchida kumbofunga. Kusaina kunoratidza kuti maverenga mukanzwisisa zvataurwa uye mibvunzo yenyu yese yapindurwa mukasarudza kupinda mutsvakurudzo.

Signature/fingerprint yenyu/yemumiririri

Nguva

Ukama nemumiririri

Zita revachapinda mumubvunzo

Kana paine zvamusina kunzwisisa batai vanoteera

College of Health, Agriculture and Natural Sciences, Africa University

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Appendix 3: English questionnaire with demographics and SSQOL

Appendix A: English Questionnaire for demographics and SSQOL

Questionnaire number:

Date:

Socio-demographic Data

No	Question	Options	code
1	Age	Number of completed years	
2	Gender	Male	1
		Female	2
3	Marital status	Single	1
		Married	2
		Divorced	3
		Widowed	4
		Other (specify).....	77
4	Religion	Christianity	1
		African tradition	2
		Apostolic (specify)	4
		Other (specify)	77
5	Does your religion allow you to seek modern medical assistance?	Yes	1
		No	2
		Yes	1

6	Do you have a history of smoking	No	2
7	Do you have a history of alcohol use	Yes	1
		No	2
8	Occupation	Job.....	
9	When did you have a stroke?	Year	
10	How many physiotherapy sessions have you had in the past year	<5 sessions	1
		≥5 sessions <10 sessions	2
		≥10	3
		≥20	4
11	Have you ever missed a physiotherapy session	Yes	1
		No	2
12	What can be the reason for missing a session	I had no money for the session	1
		I had no one to take me for the session	2
		I had too much pain and difficulties with the exercises	3
		Other(specify)	77
13	Were you told about the causes and effects of stroke by the physiotherapist?	Yes	1
		No	2
14	Were you given a home exercise program by your physiotherapist	Yes	1
		No	2
15	Are you doing any exercises at home?		
		Yes	1
		No	2

16	If you need support or help where would you readily get it?		
		Family/relatives	1
		Neighbours/ friends	2
		Workmates	3
		Church mates	3
		Other specify	77
17	Do you have any of the following conditions?	Hypertension	1
		Diabetes mellitus	2
		Heart disease	3
		HIV	4
18	How are you paying your medical bills	Cash	1
		Medical insurance	2
		Social dimension fund	3
		Pensioner	4

Stroke Specific Quality of Life Scale (SS-QOL)

Scoring: each item shall be scored with the following key

Total help- Couldn't do it at all - Strongly agree [1]

A lot of help -A lot of trouble - Moderately agree [2]

Some help - Some trouble - Neither agree nor disagree [3]

A little help - A little trouble - Moderately disagree [4]

No help needed - No trouble at all - Strongly disagree [5]

	Strongly agree Couldn't do it at all Total help	Moderately agree A lot of trouble A lot of help	Neutral Some trouble Some help	Moderately disagree A little trouble A little help	Strongly disagree No trouble at all No help needed
Energy 1. I felt tired most of the time.					
2. I had to stop and rest during the day.					
3. I was too tired to do what I wanted to do					
Family Roles 1. I didn't join in activities just for fun with my family.					
2. I felt I was a burden to my family.					
3. My physical condition interfered with my personal life					
Language 1. Did you have trouble speaking? For example, get stuck, stutter, stammer, or slur your words					
2. Did you have trouble speaking clearly enough to use the telephone?					
3. Did other people have trouble in understanding what you said?					
4. Did you have trouble finding the word you wanted to say?					
5. Did you have to repeat yourself so others could understand you					
Mobility 1. Did you have trouble walking? (If patient can't walk, go to question 4 and score questions 2-3 as 1.)					

2. Did you lose your balance when bending over to or reaching for something?					
3. Did you have trouble climbing stairs?					
4. Did you have to stop and rest more than you would like when walking or using a wheelchair?					
5. Did you have trouble with standing?					
6. Did you have trouble getting out of a chair?					
Mood					
1. I was discouraged about my future					
2. I wasn't interested in other people or activities.					
3. I felt withdrawn from other people.					
4. I had little confidence in myself.					
5. I was not interested in food					
Personality					
1. I was irritable.					
2. I was impatient with others.					
3. My personality has changed.					
Self-Care					
1. Did you need help preparing food?					
2. Did you need help eating? For example, cutting food or preparing food?					
3. Did you need help getting dressed? For example, putting on socks or shoes, buttoning buttons, or zipping?					
4. Did you need help taking a bath or a shower?					
5. Did you need help to use the toilet?					
Social Roles					
1. I didn't go out as often as I would like.					

2. I did my hobbies and recreation for shorter periods of time than I would like.					
3. I didn't see as many of my friends as I would like.					
4. I had sex less often than I would like.					
5. My physical condition interfered with my social life.					
Thinking					
1. It was hard for me to concentrate.					
2. I had trouble remembering things.					
3. I had to write things down to remember them.					
Upper Extremity Function					
1. Did you have trouble writing or typing?					
2. Did you have trouble putting on socks?					
3. Did you have trouble buttoning buttons?					
4. Did you have trouble zipping a zipper?					
5. Did you have trouble opening a jar?					
Vision					
1. Did you have trouble seeing the television well enough to enjoy a show?					
2. Did you have trouble reaching things because of poor eyesight?					
3. Did you have trouble seeing things off to one side?					
Work/Productivity					
1. Did you have trouble doing daily work around the house?					
2. Did you have trouble finishing jobs that you started?					
3. Did you have trouble doing the work you used to do?					

Appendix 4: Shona questionnaire with demographics and SSQOL

Questionnaire number:	Date:
.....	

Socio-demographic Data			
N o	Question	Options	C od e
1	Mune makore manganic	Number of completed years	
2	Gender	Male	1
		Female	2
3	Makaroora, kuroorwa, kusiyaana nemuchato ,kufirwa kana kuti hamusati mapinda muwanano.	Single	1
		Married	2
		Divorced	3
		Widowed	4
		Other (specify).....	77
4	Muri vechitendero chipi?	Christianity	1
		African tradition	2
		Apostolic (specify)	4
		Other (specify)	77
5	Chitendero chenyu chinobvumidza kuenda kuchipatara here?	Yes	1
		No	2
6	Makamboputa here?	Yes	1
		No	2
7	Makambonwa zvinodhaka here?	Yes	1
		No	2
8	Munoita basa rei remaoko?	Job.....	
9	Makaita stroke gore ripi?	Year	
10	Makaonekwa ku	<5 sessions	1

	physiotherapy kangani gore rapera		
		≥5 sessions <10 sessions	2
		≥10	3
		≥20	4
1	Makambotadz a kuenda ku physiotherapy here?	Yes	1
1		No	2
1	Chii chingakutadzis ai kuuya ku physiotherapy kana manzi mudzoke	I had the money for the session	1
2		I had no one to take me to the session	2
		I had too much pain and difficulties with the exercises	3
		Other(specify)	77
1	Makatsanangu rirwa here kuti stroke chii uye inokanganisa chii?	Yes	1
3		No	2
1	Makadzidzisiw a here zvekunoita kumba na physiotherapist?	Yes	1
4		No	2
1	Mune ma exercise amuri kuita here kumba?		
5		Yes	1
		No	2
1	Kana muchida rubatsiro, ndekupi kwamungaruona zvakasununguka?		
6		Family/relatives	1
		Neighbors/ friends	2
		Workmates	3
		Church mates	3
		Other specify	77

			
1 7	Pane chamurorwara nacho here pane zvinotevera?	Hypertension	1
		Diabetes mellitus	2
		Heart disease	3
		HIV	4
1 8	Muri kubhadhara sei mari dzinodiwa pakurapwa	Cash	1
		Medical insurance	2
		Social dimension fund	3
		Pensioner	4

Stroke Specific Quality of Life Scale (SS-QOL)

Scoring: each item shall be scored with the following key

Rubatsiro ruzere- Kukundikana zvamuchose -kubvumira zvikuru [1]

Rubatsiri ruzhinji -Kukundikana zvakanyanya –

Kubvumirana [2]

Rubatsiro - Kukundikana -Kusabvumirana nekusapokana[3]

Rubatsiro rushoma - Kukundikana zvishoma - Kupokana [4]

Hapadi rubatsiro - Hapana Kukundikana - Kupokana zvikuru [5]

Question	Strongly agree	Moderately agree	Neutral Some trouble	Moderately disagree	Strongly disagree
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	Couldn't do it at all Total help	A lot of trouble A lot of help	Some help	A little trouble A little help	No trouble at all No help needed
Energy (simba)					
1. ndogara ndichinzwa kuneta nguva dzese					
2. Ndofanira kumbozorora masikati					
3. ndonzwa kuneta ndototadza kuita zvandinenge ndichida kuita					
Family Roles (zvemhuri)					
Ndairega kutandara nevamwe kuri kusarudza kwangu kwete kuti ndaisakwanisa					
. Ndaifunga kuti ndiri kuremedza mhuru yangu					
stroke yanditadzisa kurarama zvandaisoita					
Language (kutura)					
1. makambotadza kutaura here, kukakama etc,					
2.makambotadza kutaura zvekusanzwika pa runhare here					
3 vanhu vaimbotadza kunzwisisa zvamunenge Matura here?					

4.maimbotadza kuwana mazwi akutsanamgudza zvamaida kutaura here?					
5. makambofanira kudzokorodza zvamunenge Mataura kuti vanhu vakunzwisisei here?					
Mobility (kufamba) 1.makambotadza kufamba here? (If patient can't walk, go to question 4 and score questions 2-3 as 1.)					
2. mumonzwa semakudonha here pakukotamna kana kuedza kutora zvinhu zvisiri padhuze					
3. makambotadza kukwira ma steps here?					
4. maimbomira muchizorora zvakanyanya kudarika zvamaida pakufamba or pakushandisa wheelchair?					
5. makambotadza kumira here? 6.makambotadza kusimuka here?					
Mood (kutsamwa) 1. ndaishaya tarisiro yamangwana					
2 ndaishaya shungu dzekuziva zviri kuita vamwe .					

3ndaيدا kugara ndiri ndega					
4. ndaizvitarisira pasi					
5. ndaisada kudya					
Personality (hunhu)					
1. I was irritable.					
2. ndaikasika kutsamwa					
3. hunhu hwangu hauna kuchinja					
Self-Care					
1. ndaida kubatsirwa kugadzira zvekudya					
2. maida kubatsirwa kudya chikafu chacho					
3. maida kubatsirwa kupfeka hembe, buttons, zips, bhutsu, mosocks					
4.maida kubatsirwa kugeza?					
5. maida kubatsirwa kushandisa chimbuzi					
Social Roles (zvemisha nemharaunda)					
1ndaisakwanisa kubuda pamba madiro andaida.					
2. I did my hobbies and recreation for shorter periods of time than I would like.					
3ndaaisaona shamwari dzangu madiro andaiita					
4. ndaiita bonde kashoma pane zvandaida					

5. stroke yakandikanganisira kutandara kwandaiiita nevamwe					
Thinking (kufunga)					
1. It was hard for me to concentrate.					
2. maiita dambudziko rekukanganwa here					
3. mainyorera zvinhu pasi here kuti musakanganwa					
Kushandisa maoko					
1. makambotadza kunyora here?					
2. makambbotadza kupfeka ma socks here?					
3. makambotadza kuvhara nekuvhura ma bhatani here?					
4. makambotadza kuvhara zip here?					
5. Makambotadza kuvhura bhodhoro here?					
Kuona					
1. makambotadza kuona TV here zvekutadza kunakidzwa nechirongwa chinege chichibuda ?					
2. makambotadza kutora zvinhu here nenyaya yekusaona zvakanaka?					

3. makambotadza kuona zvakanaka here kudivi rimwe chete?					
Kubasa/ kushanda					
1. makambotadza kuita tumabasa twepamusha here?					
2. Makambotadza here kupedzisa basa ramunenge matanga?					
3. Makambotadza here kuita mabasa amaimboita kudhara?					

Appendix 5: Permission letter from study site.

Telephone: 263-020-64321
Fax: +263-020-67048
E-mail: mphosp@syscom.co.zw


ZIMBABWE

Reference:
Victoria Chitepo Provincial Hospital
P.O. Box 30
Mutare
MANICALAND
ZIMBABWE

20 February 2024

Attn: Ms Tinotenda Trish Mtetwa
Africa University
Po Box 1320
Mutare

**Re: PERMISSION TO CARRY OUT A RESEARCH ON ANALYSIS OF
PHYSIOTHERAPY ADHERANCE EFFECT ON QUALITY OF LIFE IN
PATIENTS WITH SEQUELAE OF STROKE MANAGED AT VICTORIA
CHITEPO PROVINCIAL HOSPITAL**

In reference to the above subject matter:

I have no objection to your request.

You can come and carry out your study

Hope you will find this institution helpful in your studies.


DR H. MAKIWA
ACTING MEDICAL SUPERINTENDENT



Appendix 6: AUREC Approval



AFRICA UNIVERSITY RESEARCH ETHICS COMMITTEE (AUREC)

P.O. Box 1320 Mutare, Zimbabwe, Off Nyanga Road, Old Mutare-Tel (+263-20) 60075/60026/61611 Fax: (+263 20) 61785 Website: www.african.edu

Ref: AU3208/24

21 March, 2024

TRISH TINOTENDA MTETWA

C/O Africa University

Box 1320

MUTARE

RE: AN ANALYSIS OF PHYSIOTHERAPY ADHERENCE EFFECT ON QUALITY OF LIFE IN PATIENTS WITH SEQUELAE OF STROKE MANAGED AT VICTORIA CHITEPO PROVINCIAL HOSPITAL IN MUTARE

Thank you for the above-titled proposal that you submitted to the Africa University Research Ethics Committee for review. Please be advised that AUREC has reviewed and approved your application to conduct the above research.

The approval is based on the following.

a) Research proposal

- **APPROVAL NUMBER** AUREC3208/24
This number should be used on all correspondences, consent forms, and appropriate documents.
- **AUREC MEETING DATE** NA
- **APPROVAL DATE** March 21, 2024
- **EXPIRATION DATE** March 21, 2025
- **TYPE OF MEETING:** Expedited
After the expiration date, this research may only continue upon renewal. A progress report on a standard AUREC form should be submitted a month before the expiration date for renewal purposes.
- **SERIOUS ADVERSE EVENTS** All serious problems concerning subject safety must be reported to AUREC within 3 working days on the standard AUREC form.
- **MODIFICATIONS** Prior AUREC approval is required before implementing any changes in the proposal (including changes in the consent documents)
- **TERMINATION OF STUDY** Upon termination of the study a report has to be submitted to AUREC.



Yours Faithfully

MARY CHINZOU

ASSISTANT RESEARCH OFFICER: FOR CHAIRPERSON
AFRICA UNIVERSITY RESEARCH ETHICS COMMITTEE