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COLLEGE OF HEALTH SCIENCES

SCHOOL OF NURSING AND MIDWIFERY

DEPARTMENT OF CARDIOVASCULAR NURSING

QUALITY OF LIFE AND ITS PREDICTORS AMONG ADULT POST-STROKE PATIENTS WHO ARE ADMITTED AND HAVE FOLLOW-UP AT CARDIAC UNITS IN SELECTED PUBLIC HOSPITALS, ADDIS ABABA, ETHIOPIA, 2024: A CROSS-SECTIONAL STUDY

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A THESIS SUBMITTED TO ADDIS ABABA UNIVERSITY, COLLEGE OF HEALTH SCIENCES, SCHOOL OF NURSING AND MIDWIFERY IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE of MASTERS SCIENCE IN CARDIO VASCULAR NURSING

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Quality of Life and Its Predictors Among Adult Post-Stroke Patients Who Are Admitted and have Follow-Up at Cardiac Unit in Selected Public Hospitals, Addis Ababa, Ethiopia, 2024: A Cross-sectional Study Design

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APPROVAL SHEET
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This is to confirm that the research paper "Quality of Life and Its Predictors Among Adult Post-Stroke Patients Who Are Admitted and Have Follow-Up At Cardiac Unit In Selected Public Hospitals, Addis Ababa, Ethiopia, 2024" that I, Roman Hailu, a Master of Science student, submitted in 2024, complies with the requirements for the Master of Sciences degree in Cardiovascular Nursing, as well as the guidelines of the university and meets the necessary criteria for originality and quality.

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ABSTRACT

BACKGROUND: Due to the variety of disabilities and cognitive impairment that stroke produces, it is a major global public health concern. A major burden falls on stroke survivors because of the resulting persistent impairment. Stroke-related disability has a profound effect on

the patient because it not only leaves them physically disabled but also severely impairs their social lives.

OBJECTIVE: Purpose of this study was to assess quality of life and its predictors among adult post-stroke patients admitted to the cardiac unit at selected public hospitals, Addis Ababa, Ethiopia.

METHODS: Institution-based cross-sectional study design was employed in selected public hospitals, Addis Ababa Ethiopia, 2024. By using a single population proportion formula, a total of 293 adult post-stroke patients who were admitted and had a follow-up at these hospitals during the data collection period and volunteer to participate in the study adult stroke patients were involved in the study. The study was conducted from February 19, 2024 to March 19, 2024. Simple random sampling method was used to select the study participant.

RESULTS: - The results indicate that 65.5% of patients were male. Among the patients, 84.6% had a family history of stroke. Participants aged 60 years and above had significantly low PCS scores compared to the 18–29 years age group in which a slight enhancement of physical health perception in the younger age category. Widows are significant for PCS scores than singles, reflecting a potentially lower physical function or coping mechanism in this group.

CONCLUSION AND RECOMMENDATIONS: - Post-stroke individuals in the present research recorded a relatively good quality of life (QoL) scores. As per the findings, this study concludes that age, marital status, BMI, family history of stroke, and stroke duration significantly influence the physical and mental health-related quality of life (HRQoL) of stroke survivors in Addis Ababa, Ethiopia.

Keywords: Quality of life, stroke, post-stroke patients, predictors

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ABBREVIATIONS AND ACRONYMS

ADL	Activities of Daily Living
AF	Atrial Fibrillation
BI	Brain Infarction
CNS	Central Nerves System
HS	Hemorrhagic Stroke

IRB	Ethics review board
IS	Ischemic Stroke
LMICs	Low-Income and Middle-Income Countries
MCS	Mental Component Summary
PCs	Physical Component Summary
SF-36	36-Item Short Form
TIA	Transient Ischemic Attack
QoL	Quality of Life

CHAPTER ONE

1. INTRODUCTION

1.1. Background

Worldwide, stroke is a serious health concern (1). It is the primary cause of disability globally, greatly affecting the quality of life for those who suffer from it (2). A stroke is characterized by a rapid onset of focused or generalized disturbance of brain function that persists for at least twenty-four hours. It is brought on by a deficiency in nutrients and oxygen that modifies blood flow to the brain tissue. It could considerably raise morbidity and death rates (3). There are mainly two types of strokes, hemorrhagic and ischemic. Hemorrhagic strokes are caused by abrupt bleeding in the brain, while ischemic strokes are caused by obstructed blood flow to the brain (4). Numerous factors increase your risk of stroke. This syndrome is characterized by unilateral or generalized motor or sensory impairments, abnormal mentation, headaches, and/or vertigo (5).

Stroke is one of the most prevalent neurological disorders and remains a leading global cause of death, responsible for approximately 5.5 to 6.5 million deaths annually (6). It is consistently ranked as the second or third leading cause of mortality worldwide (7). The incidence of stroke has been steadily rising in low- and middle-income countries (LMICs) in which the findings of population-based research, the percentage of stroke-related deaths in Africa that account for all deaths ranges from 5.5% to 11% (8). And Ethiopia has also shared this issue in which Stroke-related mortality constitutes 6.23% of all fatalities (9).

Stroke has long been known to have a variety of repercussions on social, emotional, and physical aspects of life. Hemorrhagic and ischemic are the two categories that are included. Ischemic causes account for around 85% of stroke cases overall (10). Patients' quality of life is impacted by disability resulting from complications following a stroke. A major burden falls on stroke survivors because of the resulting persistent impairment (11).

Research on quality of life holds significance in evaluating the influence of a person's life on the community. Quality of life is defined by the World Health Organization as an individual's outlook on life, values, objectives, standards, and interests (12). To put it another way, quality of life is the degree to which people perceive their own level of physical, mental, and social well-being, including life satisfaction, a sense of health, employment, marriage, suitable socioeconomic standing, creativity, ownership, and collaboration with others (13).

One of the major health concerns of the twenty-first century is quality of life, and in the last few years, assessing it has been seen as one of the objectives in the treatment of stroke and has grown in significance in terms of prolonging life and promoting patient function (14).

Several studies have revealed conflicting characteristics that predict stroke patients' quality of life. According to a study, stroke sufferers' quality of life is generally not what they would want. Predictors of quality of life included the number of rehabilitation sessions needed, education level, history of prior strokes, and severity of the stroke. The necessary number of rehabilitation sessions was the most significant factor, accounting for 62.4% of the variance, among these four components (15).

In all healthcare settings, the idea of quality of life is still applicable. A patient's quality of life must be maximized and their goals must be satisfied when they are specially admitted to the hospital. Clarification is necessary considering the fact that research demonstrates individual differences in the ways that disease processes, symptoms, prognosis, and palliative treatments affect life quality (16). It is important to emphasize that, based on the available research, it would be incorrect to evaluate quality of life (QoL) using a narrow definition or to apply a specific model to every patient. Although there are several definitions of quality of life found in textbooks, the definition provided by the patient when seated across from their clinician may be the most accurate one (17).

1.2. **Statement of the Problem**

Stroke is a medical emergency and a common cerebrovascular injury that affects a variety of patient demographics. A stroke can result in permanent impairment, death, or irreversible brain damage. A stroke can cause anything from little weakness to numbness or paralysis on one side of the body or face. Additional symptoms could be an intense headache that appears out of the blue, unexpected weakness, difficulty seeing, and difficulty speaking or understanding speech (18).

Post-stroke mortality and morbidity are significant public health concerns worldwide. Stroke is a leading cause of death and disability, and its impact on individuals, families, and healthcare systems is substantial. Mortality rates following a stroke vary widely across different countries and regions. According to the World Health Organization (WHO), stroke is responsible for approximately 5.5 million deaths each year globally. The mortality rate from stroke is higher in low- and middle-income countries compared to high-income countries, primarily due to limited access to healthcare services, lack of awareness about stroke prevention and treatment, and higher prevalence of risk factors such as high blood pressure, smoking, and diabetes (19).

In addition to mortality, stroke also leads to significant morbidity, with many survivors experiencing long-term disabilities. Common disabilities resulting from stroke include paralysis, speech and language difficulties, cognitive impairment, and emotional disturbances. These disabilities can have a profound impact on the quality of life for stroke survivors and their families, as well as placing a considerable burden on healthcare systems and social support services (20).

Various studies have mentioned contradictory factors that predict the quality of life of stroke patients. For instance, one study predicted a negative change in the quality of life based on the following factors: age, age-related cognitive decline, side of lesion, degree of education, degree of dependence, and severity of speech disorder (21).

Stroke is one of the main causes of disability, and doubles the risk of dementia. The variables closely associated with a lower QoL or satisfaction with life of post-stroke patients include depression lower functional status and more serious paralysis. Post-stroke psychological

problems can include depression, anxiety, emotionalism and post-traumatic stress disorder. About one third of surviving patients experience depression at a certain period. Emotional problems relating to stroke can include fear, anxiety, and frustration, loss of trust, and feeling of loss, uncertainty and disappointment at not regaining health (22).

Research conducted on stroke patients has shown that the condition impairs functionality in a number of quality of life dimensions. In Latin America, there aren't many researches that address this subject, though. Developing tailored programs for functional rehabilitation, health policies aimed at achieving preadaptation to work and social inclusion, and health promotion tactics aimed at reducing risk factors for stroke patients are all very important. The purpose of that research was to examine how ischemic stroke (IS) affects health-related quality of life and relate its occurrence to the clinical and sociodemographic traits of the participants (20).

Due to the variety of disabilities and cognitive impairment that stroke produces, it is a major global public health concern. A major burden falls on stroke survivors because of the resulting persistent impairment. Stroke-related disability has a profound effect on the patient because it not only leaves them physically disabled but also severely impairs their social lives. Prior studies have demonstrated that stroke survivors' quality of life (QoL) is declining (23).

In addition to job limitation, social functioning and physical functioning were impacted by a stroke. As previously indicated, stroke patients frequently experience impairment and depression that affects their daily activities, social interactions, and daily activities. According to a prior study, patients with physical disabilities engaged in little daily activities and had trouble reintegrating into the society (24). Because these are important causes for poor quality of life, emphasis should be placed on improving social support and health experts should concentrate on lowering the stated complications. Therefore, the goal of this research is to elucidate the dynamic shift in quality of life among stroke patients and investigate the factors linked to QoL. The research may contribute to better health care policies that better assist stroke patients admitted to hospitals and raise the quality of life for stroke patients.

1.3. **Significance of the Study**

One condition that can have a major effect on QOL is stroke. To provide a more accurate and comprehensive picture of the stroke of disability, QOL measurement is crucial. Understanding the factors that influence stroke patients' quality of life can also aid in the early detection of individuals who are more vulnerable and help adjust these factors to enhance the quality of life for these patients.

Finding that comes from this research contributes to reducing patient mortality, stroke complications, and further disabilities, as well as improving care quality in high-risk patients through targeted interventions by taking a measures after knowing their total status after quality of life. It is crucial to remember that the team is treating a person, not just a set of lab values or pathology, and treatment goals need to keep the patient's QOL in mind and focus toward that outcome in conjunction with addressing medical needs.

The result of this study will be available online then it can be used as a raw data for the coming researchers and students who will conduct a study on this area by only accessing online available finding. Additionally, the outcome will serve as an input for local guidelines and policy makers for the improved activities towards patients with stroke. Also, health care workers will have enough knowledge about their patient’s quality of life.

CHAPTER TWO

2. LITERATURE REVIEW

2.1. **Introduction**

Four elements were included in the literature review section: Overview of stroke, its risk factors, quality of life and predictors are included.

A stroke is a serious medical condition that may result in permanent brain damage, permanent disability, or even death. A stroke can cause anything from little weakness to numbness or paralysis on one side of the body or face. Additional symptoms could be an intense headache that appears out of the blue, unexpected weakness, difficulty seeing, and difficulty speaking or understanding speech (19).

William Cole first used the term "stroke" in medicine in the late 17th century, and it has since been used generically. According to biology, a stroke is a sudden, localized Central nervous system (CNS) injury with a vascular origin that can cause a systemic or localized neurological insult. In order to identify the source of the lesion and determine if it is an intracerebral bleed, a cerebral infarct, technological advancements have proven advantageous. But even with these advancements, the definition of stroke is still not universally accepted (25).

A blocked blood supply to the brain or abrupt cerebral hemorrhage can both result in strokes. Two categories of strokes exist. An ischemic stroke is a type of stroke that happens when there is a blockage in the blood supply to the brain. The blood cannot supply the brain with oxygen or nutrients. Within minutes, brain cells start to die in the absence of oxygen and nutrition. Hemorrhagic strokes are those that result from abrupt bleeding in the brain. The pressure from the spilled blood damages the brain cells. Over 90% of all stroke cases are caused by clogged blood vessels (ischemic), with the remaining 10% involving internal bleeding (hemorrhagic) (26). A comparative study found ischemic stroke to be the predominant stroke phenotype in Africa, accounting for up to 73% of stroke admissions are due to ischemic stroke (27). When we come to our country also ischemic strong is seen to be more dominant among hospital admitted patients in other hand some studies are showing that hemorrhagic is to be more dominant (28).

2.2. **Risk Factors for Stroke**

The risk of having a stroke can be raised by a number of prevalent medical disorders. The analysis from Global burden of disease indicates In 2019, the five leading risk factors for stroke were high systolic blood pressure (29). In a case-control research, 2,118 case-control pairings (1,192 [56%] men) with mean ages of 59·0 years (SD 13·8) for cases and 57·8 years (13·7) for controls were enrolled in order to determine the predominant modifiable risk factors for stroke in

Ghana and Nigeria, Six (<1%) had separate ischemic and hemorrhagic lesions, while 1430 (68%) had an ischemic stroke and 682 (32%) a hemorrhagic stroke (30).

In a prospective observational study of adult patients admitted to the stroke unit of Jimma University Medical Center in southwest Ethiopia, risk factors, clinical presentations, and predictors of stroke were found to be most commonly associated with hypertension, followed by heart failure, alcohol intake, smoking, and family history (33.6%) (31).

Age-related increases in stroke risk result in a twofold rise in risk for both men and women over the age of 55. An individual's pre-existing medical conditions, such as hypertension, coronary artery disease, or hyperlipidemia, elevate their risk even further. Patients having a history of transient ischemic attacks (TIAs) account for about 60% of stroke cases. Certain stroke risk factors can be changed, while others cannot (32).

2.3. **Quality of life in post stroke patients**

The term "quality of life" (QoL) refers to the state of being that a population or an individual has with respect to all of the good and bad aspects of their life at a given moment in time. A sense of security and safety, freedom, autonomy in making decisions, social belonging, relationships, education, work environment, wealth, and one's physical, mental, and spiritual well-being are a few examples of frequent QoL factors (33).

According to the World Health Organization, QoL is the subjective assessment of an individual's reality as it relates to their aspirations, as seen through the prism of their culture and value system (34). QoL is defined by the University of Toronto's Quality of Life Research Unit as an individual's capacity to fully appreciate the significant opportunities in their lives. It is critical to distinguish between QoL and other ideas that are somewhat similar and may be mistaken with one another in the literature, such as standard of living and quality of life connected to health. In contrast to the former, quality of life is mostly determined by one's financial situation and income (35).

Developed nations, such as the United States (0.829), the United Kingdom (0.816), and Germany (0.843), have far higher quality of life indexes than developing nations, such as Ethiopia (0.433)

and Nigeria (0.534). This is caused by a number of elements, such as social welfare initiatives, political stability, and economic growth (36).

life in that the latter is a measure that explores the connection between health and QoL differs from the public health measure health-related quality of (37). As there has been recognized difficulty with arriving at a universally accepted definition and measurement, recent studies have attempted to re-frame QoL into separate domains. One example of this re-framing is the "engaged theory," which takes QoL and divides it into four main domains: economics, culture, politics, and ecology (17).

As alluded in the previous section, the primary concern with the concept of QoL is a lack of a uniform definition. Compared to measures that are financial or can be otherwise measured quantitatively, such as gross domestic product, QoL remains elusive in an exact means of measurement across world cultures, regions, and demographics. There remains a push by many academic circles to break QoL into smaller components for more accurate and meaningful evaluation. One example is dividing the concept into domains (engaged theory), while the other approach divides QoL into the ideas of personal well-being and life evaluation (38). This divide remains a widely debated topic in the literature

Stroke is a undoubtedly a disease whose consequences have a considerable impact on the quality of the patient's life. Every year, in a population of one million, approximately 2,400 people will suffer a stroke. Of these, fewer than 50% return to an independent life (39). Even those patients who regained their functional independence continue to suffer considerable deficits, limitations and changes in cognitive functions and behavior (40). Stroke is a widespread disease that has a disabling impact on life and, in addition to physical changes, brings about a number of psychological and cognitive processes. Stroke is one of the main causes of disability, and doubles the risk of dementia.

Despite the remarkable progression in the treatment of stroke, the life quality and social-related events caused by stroke received limited attentions. Most studies have shown that the QOL in stroke patients were decreased. However, there is still no report about the dynamic change of QOL in patients with stroke after treatment. Chronic diseases, such as stroke, are related to deteriorate QOL (41).

Using quality of life as an outcome criterion has been a controversial issue in the field of health care. Lack of consensus regarding a satisfactory way of quality of life has complicated the operationalization of this concept as an outcome criterion. Nevertheless, quality of life is often defined by a broad range of life domains which include psychosocial, physical, and social well-being. The most commonly used dimensions are physical function and psychosocial well-being and include ``life satisfaction'' (42). Many authors believe that individual perception is integral to the concept of quality of life. Assumptions such as this one focus on the subjective experiences of individuals rather than on objective conditions of their lives. With a growing emphasis on health promotion and individual empowerment, a conceptual framework which emphasizes the patient's perception of quality of life is gaining wider acceptance among the health-related professions. Functional status, referred to as the degree of independence in performing Activities of Daily Living (ADL), is of particular significance(43). ADL is the most commonly used measure of quality of life in the literature on the impact of stroke. Studies of stroke survivors have generally focused on the physical aspects of stroke recovery and have shown that a majority of survivors report depression and deterioration in quality of life despite their level of physical recovery. For instance, in a longitudinal study on the quality of life of patients following stroke, an author used a visual analogue scale to measure change in quality of life and found that even though lower quality of life was associated with greater disability, perceived quality of life failed to improve over time even when ADL function increased. Perceived health status, defined within a broader context of health determinants such as social environments, personal behaviors, and lifestyles, is thought to be another factor in QOL (44). However, stroke survivors are apparently more likely to rate their health as poor than age-matched nondisabled seniors living in the community, or than persons without a history of stroke but at elevated risk. Further, studies have found that both a stroke patient's perceptions of specific impairments and general health status are appropriate outcome measures in clinical trials and that perceived health status is closely related to quality of life (45).

2.4. **Predictors**

The major risk factors for stroke are age (46), male sex (47), arterial hypertension(48), cigarette smoking (49), diabetes mellitus (50), atrial fibrillation (AF) (51), and other cardiac disorders (52). In addition, some of the risk factors, eg, AF and heart failure are predictors of case fatality.

In recent years, the association between cognitive disorders and stroke has come into focus. Currently, there is evidence that dementia is a risk factor for stroke and that dementia after stroke has a negative impact on long-term survival (53).

Predictors of quality of life in post-stroke patients can encompass a wide range of physical, psychological, and social factors. Understanding these predictors is crucial for developing effective interventions and support strategies for stroke survivors. Some common predictors of quality of life in post-stroke patients include the ability to perform activities of daily living independently is a strong predictor of quality of life (54). Factors such as motor function, mobility, and self-care abilities play a significant role in determining a stroke survivor's quality of life. Cognitive impairments following a stroke, including memory, attention, and executive function deficits, can impact a patient's quality of life (55). The ability to communicate, make decisions, and engage in meaningful activities is closely linked to cognitive function. Post-stroke depression, anxiety, and emotional lability can significantly affect quality of life (56). Mental health support and interventions aimed at addressing emotional well-being are important predictors of overall quality of life in stroke survivors (57). The availability of social support networks, including family, friends, and community resources, can positively influence a stroke survivor's quality of life. Social engagement and participation in meaningful social activities are important for overall well-being. The physical environment, access to healthcare services, and community resources can influence a stroke survivor's quality of life. Factors such as transportation, accessibility of facilities, and availability of support services play a role in determining overall well-being (58).

2.5. **Conceptual Framework**

The clinical factor of the independent variable includes diabetic mellitus and those cardiac abnormalities like atrial fibrillation and heart failure. The other independent variable is socio demographic characteristics which includes sex, age, educational background and marital status. The dependent variable in this study is Quality of life of post-stroke patients. Also predictors are one factors that may affect the quality of life.

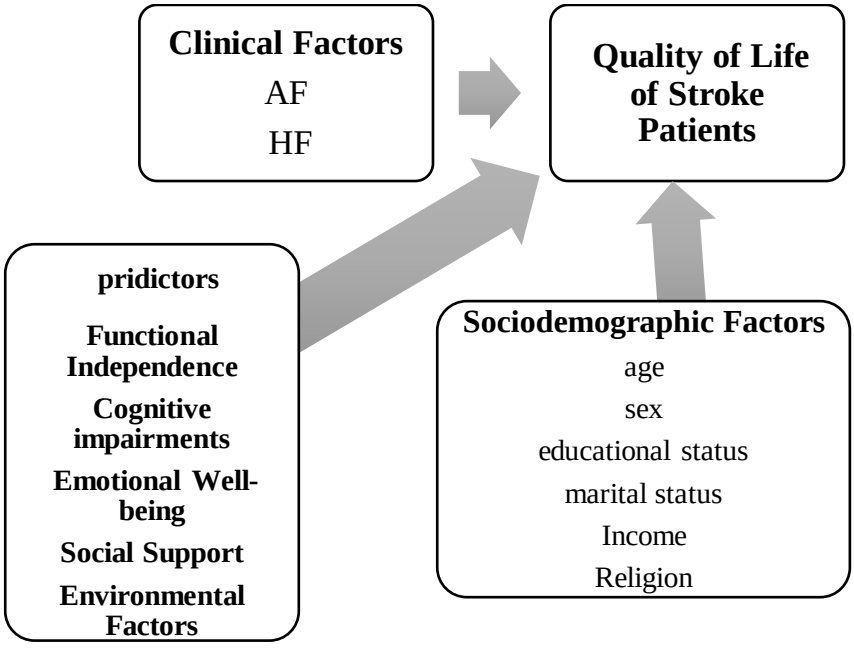

Fig 1: Conceptual framework of the study demonstrating the relationship between socio-demographic and clinical characteristics with quality of life of stroke patients (source: own developed)

CHAPTER THREE

3 OBJECTIVES

3.1 General objective

To assess quality of life and its predictors among adult post-stroke patients who are admitted and have follow-up at the Cardiac Units in Selected Public Hospitals, Addis Ababa, Ethiopia, 2024.

3.2 Specific objectives

- To determine quality of life among Adult post-Stroke Patients who are Admitted and have follow-up at Cardiac Units in Selected Public Hospitals
- To identify Predictors of QoL among Adult post-Stroke Patients who are Admitted and have follow-up at Cardiac Units in Selected Public Hospitals

CHAPTER FOUR

4. MATERIALS AND METHODS

4.1. Study Area and Study Period

The study was conducted in Tikur-Anbessa Specialized Hospital St. Paul and Hospital Millennium Medical College. The study setting selection was purposive, considering the availability of cardiac units. These Hospitals are found in Addis Ababa, the capital city of Ethiopia. They have outpatient and inpatient services for cardiac patients. These two hospitals together give outpatient and inpatient services for more than 2400 adult patients with Stroke.

SPHMMC is one of the largest tertiary referral government hospitals with 400 beds. The hospital gives diagnostic and treatment services for more than 400,000 patients per year (OPD; 366265, Emergency; 36187, Inpatients; 18814 and cardiac clinic 31897).

TASH is the largest tertiary care referral and teaching hospital in Ethiopia, with 700 beds. Various healthcare workers (HCWs), including general practitioners and specialists, nurses, medical laboratory technologists, pharmacists, are part of the TASH working force serving the community wholesomely. The hospital has 3021 active staff. TASH annually serves around 589,020 patients. From these, 41,220 patients receive emergency service, around 525,888 patients attend OPD, 21, 912 inpatients and 8067 of them are cardiac patients (as an inpatient) with a total of 36,754 cardiac out patients.

The study was conducted from February 19, 2024 to March 19, 2024.

4.2 Study Design

An institution-based cross-sectional study design was conducted.

4.3. Population

4.3.1 Source Population

All adult post-stroke patients, admitted and had follow-up in Tikur Anbessa Specialized Hospital and St. Paul Hospital Millennium Medical College.

4.3.2. Study Population

Adult post-stroke patients admitted and had follow-up in Tikur Anbessa Specialized Hospital and St. Paul Hospital Millennium Medical College and fulfil the inclusion criteria

4.4 Eligibility Criteria

4.4.1 Inclusion Criteria

Adult stroke patients aged over 18 years, admitted and attended the follow-up clinic in Tikur Anbessa Specialized Hospital and St. Paul Hospital during the data collection period and volunteer to participate in the study

4.4.2 Exclusion Criteria

Adult Stroke patients who are unable to participate in the study due to sever medical condition during the data collection period was excluded.

4.5 Operational Definitions

The following Terms and Operational Definitions are used:

Stroke patient is a patient admitted and had follow-up in TASH and St. Peter specialized hospital with as main diagnosis is put as Stroke in his/ her chart.

Quality of life is Patient's perception and rating of his/ her own health regarding all eight domains of SF-36 in the past four weeks (59).

Poor quality of life is Stroke patients with mean summary scores below 50 (60).

Good quality of life is Stroke patients with mean summary scores above 50 (61).

4.6 Study Variables

4.6.1 Dependent variables

Quality of Life of Stroke Patients

4.6.2 Independent variables

- **Clinical Factors**

- Atrial Fibrillation
- Heart Failure

- **Sociodemographic Factors**

- age
- sex
- educational status
- marital status
- family history of stroke
- Religion
- Income
- The presence of speech impairments
- The presence of other infections
- Attitude of caregivers

4.7 Sample Size Determination and Sampling Procedure

The sample size was calculated on the assumption of a single population proportion formula, since there is a study conducted in Gondar; Ethiopia the prevalence of 25% was taken and 0.5 margin of error. Accordingly, a total of 293 adult stroke patients were involved in the study.

$$n = \frac{(Za_{/2})^{2}\ p(1-p)}{d^2}$$

$$n = \frac{(1.96)^2\ (0.25)(1-0.25)}{(0.05)^2}$$

$$= \frac{0.96025}{0.0025} = 288$$

Where;
n - Is the estimated sample size
p - Is the proportion of patients
d - Is the margin of error

By adding a 5% non-response rate the final sample size was 303

4.8 Sampling methods and procedures

A simple random sampling technique was used to select 303 study participants from two selected hospitals in proportion to their total population of admitted stroke patients attending healthcare. Based on the data collected from the hospital unit, the estimated total population of admitted stroke patients and attending the follow-up clinic of selected hospitals are 2400. The proportional allocation of the sample to each hospital was calculated based on the total number of stroke patients who have follow-up and admitted in their Hospital units. The final proportional sample is depicted in the figure 2 below.

The proportional value was calculated with the formula: =

$$\frac{\text{Total sample x total population of specific area}}{\text{Total population}}$$

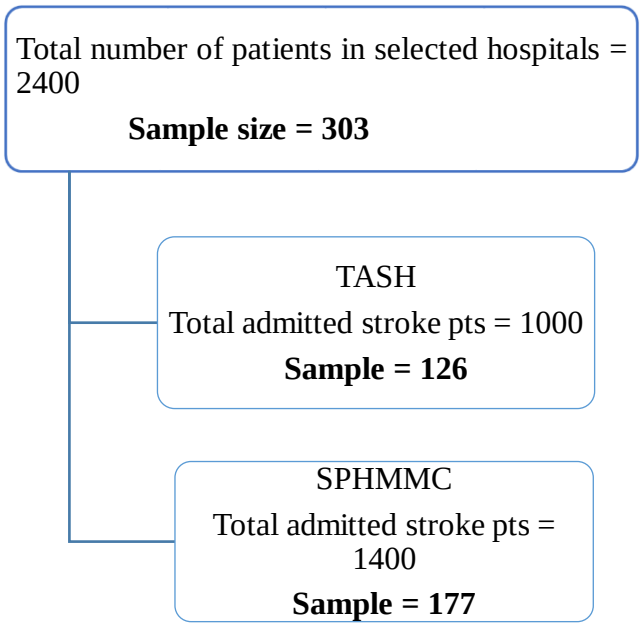

Fig 2: proportional allocation of the total sample

4.9 Data Collection Procedures and Tools

4.9.1 Data Collection Procedures

TASH and SPHMMC Cardiac clinics had 1,000 and 1,400 admitted patients respectively. These were the general source population in the study period. 177 from SPHMMC and 126 from TASH were proportionally assigned to get a total of 303 sample size. Participants were proportionally allocated based on the total patient flow in the two hospitals.

4.9.2 Data Collection Tool

The questionnaire consisted of three parts which were divided into the socio-demographic characteristics assessment, clinical factors checklist, and the SF-36 questionnaire. The English version of the Short Form 36 (SF 36) measuring tool which contains 36 questions was translated in to Amharic according to the guidelines set by the developers.

The SF-36 (36-Item Short Form), that measures eight domains of health status: physical functioning (ten items); physical role limitations (four items); bodily pain (two items); general health perceptions (five items); energy/vitality (four items); social functioning (two items); emotional role limitations (three items) and mental health (five items). The two summary scores namely Physical Component Summary (PCS) and Mental Component Summary (MCS) summarizes the result of the eight domains into two cumulative aspects of QoL. A scoring algorithm was used to convert the raw scores into the eight dimensions listed above. The scores were transformed to range from zero where the respondent has the worst possible health to 100 where the respondent is in the best possible health. It yields an eight-scale profile of scores as well as physical and mental health summary measures. SF-36's strong focus on health and evidence of responsiveness makes it particularly useful. It was filled by nurses under the supervision of the principal investigator and supervisors.

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4.10 Data Quality Assurance

The quality of data was assured before, during, and after data collection. Accordingly, before data collection, training was given to the data collectors. During data collection, the principal investigator and supervisors ensured the completeness and consistency of the questionnaires administered each day. Missed variables were completed by reviewing the chart. After data collection, the collected information was rechecked for its completeness and consistency by the principal investigator before transferring it to computer software. Non-

overlapping unique code were given for each individually answered questionnaire and the coded data were entered and cleaned in SPSS V.27 software.

4.11 Data Analysis

Each question (or item) on the SF-36 survey was given a score. These scores were summed over each field to yield a total (also called a linear score).This total score was then scaled to a range of 0 to 100 using a standard formula recommended by the SF-36 scoring manual. This new score is called a Z-score. Then, the major summary scores, known as Physical Component Summary (PCS) and Mental Component Summary (MCS), were calculated by applying a precise mathematical process (orthogonal rotation) to those Z-scores. This is accomplished to separate the physical and mental aspects of health from the overall score

Frequencies, percentages, means and standard deviations were used for demographic variables and the mean scores of the study variables were described. The Likert method of summated ratings was employed in the construction of the items and dimensions of the Short Form-36 (SF-36) health survey. Likert scales were used to rate each item, and the sum of the individual item scores determines the raw scores for each of the eight SF-36 dimensions. The questionnaire's raw scores were then transformed into a scale with values ranging from 0 (the poorest possible health state) to 100 (the finest possible health state). This conversion makes it simple to compare and understand health status among many aspects and people.

The linear regression model was used to identify the determinate factors for the two summary measures (MCS and PCS). Prior to analysis, it was verified that the linear regression's underlying assumptions were met. The data's diagnostic tests revealed that all of the presumptions required for regression analysis have been satisfied.

4.12 Ethical Considerations

Before data collection, ethical clearance was obtained from the Institutional Research Ethics review board (IRB) of Addis Ababa University, College of health sciences, School of Nursing and Midwifery. Letter of the permission was obtained from respective bodies and in each study subject. Participation in the study is voluntary and the purpose of the study was explained to participants before conducting an interview. Written consent was obtained from study participants by attaching a statement of consent to each questionnaire. However, the

identification of the participants was not recorded anywhere on the questionnaire, and confidentiality was assured by analyzing the data in aggregate. An official email request was sent for the original SF-36 license before the start of the data collection procedure commencement.

CHAPTER FIVE

5 RESULTS

5.1 Socio-demographic information of participants

The response percentage is 96.6% i.e., 293. Sociodemographic information describe the adult Post-Stroke Patients social profile admitted and with follow-up at Cardiac Units in chosen public hospitals in Addis Ababa, Ethiopia, with a sample of 293. The results indicate that 65.5% of patients were males, while 34.5% were females. Age structure showed 19.1% between the age

of 18-29, 50.2% of the age 30-59, and 30.7% aged 60+. As a marital status, 43.3% were unmarried, 41.3% married, and 8.5% widowed. By body mass index, 77.8% were 18.6-24.9 and 13.7% as BMI ≥ 25. Educational level indicated 65.5% attained Grade 12 or above, and 44.7% belonged to the middle-income category (3000-6999 ETB). Furthermore, the majority of them were Orthodox at 70.3%, followed by Muslim at 21.5%, Protestant at 6.8%, and Catholic at 1.4% (Table 1).

Table 1: Socio-demographic information and clinical characteristics of Adult Post-Stroke Patients who are Admitted and Have Follow-up at Cardiac Units in Selected Public Hospitals, Addis Ababa, Ethiopia (N = 293).

Variables	Category	N	%
Gender	Male	192	65.5
	Female	101	34.5
Age (in Years)	18 – 29	56	19.1
	30 – 59	147	50.2
	≥ 60	90	30.7
Marital Status	Single	127	43.3
	Married	121	41.3
	Divorced	20	6.8

	Widowed	25	8.5
Body Mass Index	≤ 18.5	25	8.5
	18.6 - 24.9	228	77.8
	≥ 25	40	13.7
Educational Status	Unable to read & write	1	0.3
	Able to read & write	52	17.7
	Primary school (Grades 1-8)	11	3.8
	Secondary school (Grades 9 & 10)	21	7.2
	Preparatory school (Grades 11 & 12)	16	5.5
	Grade 12 & above	192	65.5
Monthly Income (in ETB)	Low Income (1000-2999)	22	7.5
	Medium Income (3000-6999)	131	44.7
	High Income (7000-9999)	104	35.5
	Very High Income (10000 and above)	36	12.3
Religion	Catholic	4	1.4
	Muslim	63	21.5
	Orthodox	206	70.3
	Protestant	20	6.8

5.2 Clinical characteristics of participants

The below table illustrates the clinical presentations of 293 post-stroke adult patients admitted and followed up at cardiac units of chosen public hospitals in Addis Ababa, Ethiopia. Among the patients, 84.6% indicated a family history of stroke, of which 56.0% were diagnosed within 12 months, 30.4% within 24 months, and 8.5% within 36 months after the onset of stroke. The etiology of strokes was predominantly ischemic (64.8%), cardioembolic (20.8%), hemorrhagic (4.1%), and others (10.2%). The presence of cardiac cases among the patients was observed in 99.0% of the cases (Table 2).

Table 2: Clinical characteristics of Adult Post-Stroke Patients who are Admitted and Have Follow-up at Cardiac Units in Selected Public Hospitals, Addis Ababa, Ethiopia (N = 293).

Variables	**Category**	**N**	**%**
Family History of Stroke	No	45	15.4
	Yes	248	84.6
Duration of	12	164	56.0

Stroke since Diagnosed (in Months)	24	89	30.4
	36	25	8.5
	48	14	4.8
	60	1	.3
Type of Stroke	Cardioembolic Stroke	61	20.8
	Hemorrhagic Stroke	12	4.1
	Ischemic Stroke	190	64.8
	Others	30	10.2
The Presence of Cardiac Cases	No	3	1.0
	Yes	290	99.0

5.3. Mean Scores for the Eight SF-36 Domains and the Two Summary Measures

The eight SF-36 domain and summary measures' mean values indicate varied health-related quality of life for cardiac patients admitted to selected public hospitals in Addis Ababa, Ethiopia. The patients had a mean Physical Component Summary (PCS) score of 61.82 (SD = 5.15, 95% CI: 61.23-61.72) and a Mental Component Summary (MCS) score of 71.63 (SD = 3.39, 95% CI: 72.03-71.25). These quantitative results provide an idea of the participants' health status and well-being in this population.

Table 3: Mean Scores for the Eight SF-36 Domains and the Two Summary Measures (PCS and MCS) of patients who are Admitted and Have Follow-up at Cardiac Units in Selected Public Hospitals, Addis Ababa, Ethiopia (N = 293).

SF-36 Subscales and Summary Measures	**Mean Score of Study Participants (n=293)**	**SD of Study Participants**	**95% CI for Mean of the Study Participant**	
			Lower	**Upper**
PF	27.17	16.77	25.24	29.10
RP	99.92	1.46	99.75	100.1
BP	83.21	16.67	81.29	85.12
GH	36.9	4.74	36.95	37.54
VT	50.67	7.50	49.84	51.56
SF	82.53	9.77	81.41	83.66
RE	100	0.00	100	100
MH	53.28	3.87	52.84	53.73

PCS	61.82	5.15	61.23	61.72
MCS	71.63	3.39	72.03	71.25

Abbreviations: BP, Body pain, CI, confidence interval, GH, general health, MCS, mental component summary, MH, mental health, PCS, physical component summary, PF, Physical functioning; RE, role limitation due to emotional problems; RP, role limitation due to physical problems, SF, social functioning, SD, standard deviation, VT, vitality.

5.4Factors associated with HRQOL

Regression coefficients of determinants of Summary Measures of SF-36 for patients admitted in cardiac units of selected public hospitals in Addis Ababa, Ethiopia were calculated. Of the variables analyzed for the physical and mental component summary (PCS and MCS) scores of the SF-36. Participants aged 60 years and above had significantly lower PCS scores (highly significant) compared to the 18–29 years age group ($\beta = 0.152$; 95% CI: –0.023 to 3.407; $p = 0.049$), which indicates a slight enhancement of physical health perception in the younger age category. Marital status also had significant correlation; widows/widowers are significant for PCS than singles ($\beta = 0.146$; 95% CI: 0.475 to 4.881; $p = 0.017$), reflecting a potentially lower physical function or coping mechanism in this group. On the other hand, participants who had a BMI of 25 and above had significantly lower MCS scores compared to those with a BMI of 18.5 and below ($\beta = –0.212$; 95% CI: –3.766 to –0.405; $p = 0.015$), indicating poorer mental health status in overweight or obese people.

Similarly, family history of stroke was associated with a significantly lower PCS score (β = –0.206; 95% CI: –4.545 to –1.325; p < 0.001), representing a negative impact on physical health perception. Lastly, individuals who were diagnosed with stroke for 36 months also scored significantly lower on MCS compared to those who were diagnosed for 12 months (β = –0.146; 95% CI: –3.198 to –0.344; p = 0.015), reflecting the possible long-term psychological effect of stroke.

Table 4: Regression Coefficients of the Determinant Factors for Summary Measures of SF-36 Resulted from Multiple Linear Regressions of Patients who are Admitted and Have Follow-up at Cardiac Units in Selected Public Hospitals, Addis Ababa, Ethiopia (*N = 293).*

Variables	**PCS[a]**				**MCS[b]**			
	β	**95% CI**		**p-value**	**β**	**95% CI**		**p-value**
		Lower	**Upper**			**Lower**	**Upper**	
Age (Ref= 18 - 29 Years Old)								
30 - 59 Years Old	.023	-1.345	1.819	.768	-.057	-1.437	.668	.472
≥ 60 Years Old	.152	-.023	3.407	**.049***	-.026	-1.333	.946	.739
Marital Status (Ref= Single)								
Married	.105	-.180	2.378	.092	-.035	-1.096	.610	.575
Divorced	.012	-2.169	2.675	.837	.006	-1.532	1.692	.922
Widowed	.146	.475	4.881	**.017***	.043	-.950	1.982	.489
Body Mass Index (Ref= ≤18.5)								
18.6 - 24.9	.119	-.661	3.610	.175	-.047	-1.769	1.009	.590
≥25	.110	-.941	4.228	.212	-.212	-3.766	-.405	**.015***
Family History of Stroke (Ref= No)								
Yes	.206	-4.545	-1.325	**< 0.00***	.014	-.956	1.212	.817
Duration of Stroke since Diagnosed in Months (Ref= 12 months)								
24 months	.051	-.771	1.907	.404	-.011	-.957	.799	.860
36 months	.056	-1.158	3.209	.356	-.146	-3.198	-.344	**.015***
48 months	.018	-2.392	3.272	.760	-.061	-2.823	.877	.301
60 months	.054	-5.476	14.928	.363	-.026	-8.156	5.174	.660

Notes: β-regression coefficient, a physical component summary, b mental component summary, bold p-value<0.05.

CHAPTER SIX

6 DISCUSSION

Significant correlations between physical component summary (PCS) and mental component summary (MCS) scores with variables such as age, marital status, body mass index (BMI), family history of stroke, and stroke duration were found. The low Physical Component Summary (PCS) score of indicates that patients experience significant physical limitations and difficulties in performing daily activities. This is consistent with the high prevalence of physical impairments and functional disabilities reported among stroke survivors in Ethiopia and Africa (65). The higher Mental Component Summary (MCS) suggests that patients have relatively good mental health and well-being despite the challenges they face. This may be attributed to the strong social support networks and cultural factors that emphasize resilience and community involvement in African countries (64).

The PCS score was significant for participants aged 60 and above compared with 18–29 years. This is similar with findings of studies in United States, where increasing age tends to be

associated with lower PCS scores due to physical decline with advancing age and comorbid conditions (65). At the same time, study in China and South Korea have tended to report greater physical health among younger stroke survivors due to the increased physiological resistance. However, the studies in the Sub-Saharan African countries such as Nigeria and Ghana have reported different trends to our research, where older individuals report better functioning physically (59, 60). In contrast to our findings for PCS, age was not found to be a significant predictor of MCS. This suggests that mental health outcomes may be less affected by age among post-stroke patients in Ethiopia. This may be due to the strong social support networks and cultural factors that emphasize resilience and community involvement in Ethiopia and other African countries (67).

Widowed interviewees reported significantly higher PCS scores compared to singles, a result align with the findings in the United States, U.K (68). In contrast, Indian study have delineated that widowed individuals especially older women may derive more family care and community support to improve well-being overall (69).

Emotionally, a BMI ≥25 was significantly associated with lower MCS scores. This is in line with most Western research, for example, that done in America and Canada, where obesity has been linked to increased psychological distress because of accompanying comorbidities, mobility issues, as well as stigmatization (70). A study done in Japan and Thailand, also find parallel conclusions regarding obesity having negative mental health outcomes (68,69). In Kenyan a study showed this pattern in that urban obesity is linked to poor mental health (64).

Family history of stroke participants scored lower PCS significantly. This concurs with studies from Europe, Australia, and the U.S., which also identify family history of stroke to be largely explained by fear of recurrence, decreased confidence in being able to participate in exercise, and negative health beliefs (70-72). Comparable results from Asian country, Malaysia, also discovered correlations of family history with low self-efficacy and greater health worries (73).

Finally, survivors of stroke with a diagnosis history of 36 months or more had substantially decreased MCS scores. This trend is worldwide consistent since research in Sweden, Italy, and the U.S (70-72). indicated that long-term stroke survivors tend to have declining mental health because of ongoing disability and absence of psychosocial support.

Research in Sub-Saharan Africa, such as research in Nigeria and Zambia, also verifies that longer stroke duration is linked with more depression and anxiety. In Ethiopia, limited access to long-term mental health and rehabilitation care most likely exacerbates this issue (62, 63).

CHAPTER SEVEN

7 STRENGTH AND LIMITATION OF THE STUDY

7.1 Strength

The potential of a study of the quality of life among post-stroke adult patients who are admitted and followed up at selected public hospitals of Addis Abaaba, Ethiopia, can lie in the following:

1. The research Asking questions about the quality of life among post-stroke patients is significant so that their overall well-being can be better understood, especially in a cardiac unit where they might be given integrative care.

2. The inclusion of follow-up assessments allows a longitudinal investigation of quality of life development after a stroke over time, providing more information than with the use of cross-sectional studies alone.

3. By determining predictors of quality of life among patients with a stroke, the research might offer informative data to assist health professionals in tailoring intervention and support to improve the quality of life of patients.

7.2 7.2 Limitations

there are some potential weaknesses of the study

1. Quality of life indicators are likely to be grounded on self-reporting, which is susceptible to individual subjectivity and bias and may affect the reliability and validity of the results.

2. The study may not accurately measure all quality of life predictors for post-stroke patients

3. Even with follow-up measurements, the research design can limit the study to make causal conclusions between predictors and quality of life outcomes because the study cannot possibly account for changes that would have accrued in the predictors with time or their lasting impact on post-stroke recovery.

CHAPTER Eight

8 Conclusion and Recommendations

8.1 Conclusion

Post-stroke individuals in the present research recorded a relatively good quality of life (QoL) scores. Individuals who record a low Physical Component Summary (PCS) score are most likely to experience serious psychiatric restrictions that weaken common tasks for them, rendering them difficult to accomplish. While they may struggle, patients seem to have overall good mental well-being and health based on their higher Mental Component Summary (MCS). Additionally, the results of this study have shown that in the case of stroke patients in Addis Ababa, Ethiopia, age is a predictor of physical health-related quality of life (HRQoL). As per the findings, this study concludes that age, marital status, BMI, family history of stroke, and stroke duration significantly influence the physical and mental health-related quality of life (HRQoL) of stroke survivors in Addis Ababa, Ethiopia. While older age and widow were associated with higher physical health scores, higher BMI, higher stroke duration, and family history of stroke had an adverse effect on both mental and physical health. These results are in line with some global patterns but also reflect local health and social processes. Personalized rehabilitation strategies that address physical along with psychological demands especially for obese patients and those with a long stroke history are necessary to increase the overall quality of life among stroke survivors in resource-scarce settings like Ethiopia.

8.2 Recommendations:

1. Take a comprehensive approach to stroke prevention through the encouragement of healthy lifestyles by regular exercise, healthy diet, and non-smoking.

2. Develop and implement models of integrated care that address stroke and cardiac disease together.

3. Train healthcare providers to diagnose and manage the cardiac complications of stroke.

4. Provide multidisciplinary rehabilitation services that include physical therapy, occupational therapy, speech therapy, and psychological counseling. And develop culturally appropriate rehabilitation programs that incorporate traditional healing practices and address the unique needs of post-stroke patients in Ethiopia.

6. Conduct further research to identify other predictors of HRQoL in post-stroke survivors in Ethiopia and evaluate the efficacy of different rehabilitation interventions.

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10. ANNEXES

APPENDIX-A: Information sheet and informed consent (English version)

Participant information sheet and informed voluntary consent form for the study participant to assess "Quality of Life and its Predictors among Adult Post-Stroke Patients who are Admitted and have follow-up at Cardiac Unit in Selected Public Hospitals, Addis Ababa, Ethiopia, 2023: A Cross-sectional Study"

My name is _____. I am working as a data collector for the study being conducted by Roman Hailu who is MSc student in Addis Ababa University,

College of Health Science, School of Nursing and Midwifery for the partial fulfillment of a Master's degree in Cardiovascular Nursing. I kindly request you to lend me your attention to explain to you about the study and being selected as the study participant.

1. The research title:

Quality of Life and its Predictors among Adult Stroke Patients Admitted to the Cardiac Unit at Selected Public Hospitals, Addis Ababa, Ethiopia, 2023: A Cross-sectional Study

2. Purpose of the study:

This study aims to assess Quality of Life and its Predictors among Adult Stroke Patients Admitted to the Cardiovascular Unit at Selected Public Hospitals.

3. Participation

If you agree to join the study, you will be kindly requested to answer all the questions that will be asked by the data collector.

4. Confidentiality

Information obtained from you will be treated confidentially and will NEVER be used for any purpose other than this study.

5. Risk

No harm is expected to happen to anyone participating in this study.

6. Benefit

Your participation in this study will help us to understand Quality of Life and its Predictors among Adult Stroke Patients Admitted to the Cardiovascular Unit at Selected Public Hospitals, Addis Ababa, Ethiopia, 2023: A Cross-sectional study to suggest ways to improve them

After reading and understanding the information explained above; if you agree to participate in this study, choose YES by placing a mark in the box provided.

• YES • NO

Roman Hailu (B.Sc.): 0911910770

Email: romanhailu@gmail.com

APPENDIX-B:□□□□ □□□□ □□ □□□□ □□ □□□□□□ □□□□□ (□□□□□ □□)

ለጥናቱ ተሳታፊ የተሣታፊ መረጃ ወረቀት እና በፈቃደኝነት ላይ የተመሰረተ የፍቃድ ቅጽ ለጥናቱ ተሳታፊ "ተመረጡ የህዝብ ሆስፒታሎች ውስጥ በአዋቂዎች ድህረ-ስትሮክ ታማሚዎች መካከል ያለው የህይወት ጥራት እና መንስኤዎች ላይ ያተኩራል።

የኔ ስም _____. በአዲስ አበባ ዩኒቨርሲቲ፣ ጤና ሳይንስ ኮሌጅ፣ ነርሲንግ እና አዋላጅ ትምህርት ቤት የMSc ተማሪ በሆነችው በሮማን ሀይሉ እየተካሄደ ላለው ጥናት መረጃ ሰብሳቢ ሆኜ እየሰራሁ ነው። ስለ ጥናቱ እና የጥናቱ ተካፋይ ሆኖ መመረጡን ለእርስዎ ለማስረዳት ትኩረትዎን እንዲሰጡኝ በአክብሮት እጠይቃለሁ።

1. የምርምር ርዕስ፡-

በህዝብ ሆስፒታሎች ውስጥ በአዋቂዎች ድህረ-ስትሮክ ታማሚዎች መካከል ያለው የህይወት ጥራት እና መንስኤዎች በተመረጡት የህዝብ ሆስፒታሎች ፣ አዲስ አበባ ኢትዮጵያ ፣ ክፍል-አቀፍ ጥናት

2. የጥናቱ ዓላማ፡-

ይህ ጥናት በአዋቂዎች ድህረ-ስትሮክ ታማሚዎች መካከል ያለው የህይወት ጥራት እና መንስኤዎች በተመረጡ የህዝብ ሆስፒታሎች ውስጥ ለመገምገም ያለመ ነው ፣ አዲስ አበባ ኢትዮጵያ ፣ ውስጥ የሚደረግ ጥናት ነው ።

3. ተሳትፎ

ጥናቱን ለመቀላቀል ከተስማሙ በመረጃ ሰብሳቢው የሚጠየቁትን ጥያቄዎች በሙሉ እንዲመልሱ በአክብሮት ይጠየቃሉ።

4. ምስጢራዊነት

ከእርስዎ የተገኘ መረጃ በሚስጥር ይያዛል እናም ከዚህ ጥናት ውጭ ለማንኛውም ዓላማ ፈጽሞ ጥቅም ላይ አይውልም.

5. ስጋት

በዚህ ጥናት ውስጥ በሚሳተፍ ማንኛውም ሰው ላይ ምንም አይነት ጉዳት አይደርስም ተብሎ ይጠበቃል።

6. ጥቅም

በዚህ ጥናት ውስጥ ያለዎት ተሳትፎ በህዝብ ሆስፒታሎች ውስጥ በአዋቂዎች ድህረ-ስትሮክ ታማሚዎች መካከል ያለው የህይወት ጥራት እና መንስኤዎች በተመረጡት የህዝብ ሆስፒታሎች ፣ አዲስ አበባ ኢትዮጵያ ፣ ክፍል-አቀፍ ጥናት፣ ይህንን ለማሻሻል የሚረዱ መንገዶችን ለመጠቆም ያግዛል ።

ከላይ የተገለፀውን መረጃ ካነበቡ እና ከተረዱ በኋላ; በዚህ ጥናት ለመሳተፍ ከተስማሙ፣ በተዘጋጀው ሳጥን ውስጥ ምልክት በማድረግ አዎ የሚለውን ይምረጡ።

አዎ አይ

ከላይ በተገለጸሎት መሰረት በጥናቱ ለመሳተፍ ፈቃደኛ ኖት?

አዎ ነኝ ካሉ ፊርማዎትን ያኑሩ ----------

አይ አይደለሁም

አመሰግናለሁ።

የመረጃ ሰብሳቢዉ ስም ----------

ፊርማ ----------

APPENDIX-C: Section 1&2: Socio-Demographic Information and clinical questions

(N/B: Respondents to please check (✓) where appropriate)

1. Gender;

☐ Male

☐ Female

2. Age; _____years old

3. Marital status;

☐ Single (never married)

☐ Divorced

☐ Married

☐ Widowed

4. BMI: _____ Kg/M^2 (Height; ----------M) Weight; ----------Kg)

5. Level of education;

☐ Unable to read and write

☐ Able to read and write

☐ Primary School (Grades 1-8)

☐ Secondary School (Grades 9 and 10)

☐Preparatory school (Grade 11 and 12

☐Above 12

☐ Others (Please specify); _____

6. Monthly Income; _____ ETB

7. Religion;

☐ Orthodox

☐ Muslim

☐ Protestant

☐ Catholic

☐ Others (Please Specify), _____

8. Family history of stroke

☐ yes present

☐ No history

9. Duration of stroke since diagnosed: _____

10, type of stroke

11, The presence of cardiac cases

APPENDIX-D: SF-36 QUESTIONNAIRE

Please answer the 36 questions of the Health Survey completely, honestly, and without interruptions.

GENERAL HEALTH:

1. In general, would you say your health is:

A. Excellent B. Very Good C. Good D. Fair E. Poor

2. Compared to one year ago, how would you rate your health in general now?

A. Much better now than one year ago B. Somewhat better now than one year ago
C. About the same D. Somewhat worse now than one year ago
E. Much worse than one year ago

LIMITATIONS OF ACTIVITIES:

The following items are about activities you might do during a typical day. Does your health now limit you in these activities? If so, how much?

3. Vigorous activities, such as running, lifting heavy objects, participating in strenuous sports.

A. Yes, limited a lot B. Yes, Limited a Little C. No, Not Limited at all

4. Moderate activities, such as moving a table, chair around the house and moderate sports

A. Yes, limited a Lot B. Yes, Limited a Little C. No, Not Limited at all

5. Lifting or carrying groceries

A. Yes, limited a Lot B. Yes, Limited a Little C. No, Not Limited at all

6. Climbing several flights of stairs

A. Yes, limited a Lot B. Yes, Limited a Little C. No, Not Limited at all

7. Climbing one flight of stairs

A. Yes, limited a Lot B. Yes, Limited a Little C. No, Not Limited at all

8. Bending, kneeling, or stooping

A. Yes, limited a Lot B. Yes, Limited a Little C. No, Not Limited at all

9. Walking more than one and half kilometer

A. Yes, limited a Lot B. Yes, limited a Little C. No, Not Limited at all

10. Walking several kebeles

A. Yes, limited a Lot B. Yes, limited a Little C. No, Not Limited at all

11. Walking one kebele

A. Yes, limited a Lot B. Yes, Limited a Little C. No, Not Limited at all

12. Bathing or dressing yourself

A. Yes, limited a Lot B. Yes, Limited a Little C. No, Not Limited at all

PHYSICAL HEALTH PROBLEMS:

During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of your physical health?

13. Cut down the amount of time you spent on work or other activities

A. Yes B. No

14. Accomplished less than you would like

A. Yes B. No

15. Were limited in the kind of work or other activities

A. Yes B. No

16. Had difficulty performing the work or other activities (for example, it took extra effort)

A. Yes B. No

EMOTIONAL HEALTH PROBLEMS:

During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of any emotional problems (such as feeling depressed or anxious)?

17. Cut down the amount of time you spent on work or other activities

A. Yes B. No

18. Accomplished less than you would like

A. Yes B. No

19. Didn't do work or other activities as carefully as usual

A. Yes B. No

SOCIAL ACTIVITIES:

20. Emotional problems interfered with your normal social activities with family, friends, neighbors, or groups?

A. Not at all B. Slightly C. Moderately D. Severe E. Very Severe

PAIN:

21. How much bodily pain have you had during the past 4 weeks?

A. None B. Very Mild C. Mild D. Moderate

E. Severe F. Very Severe

22. During the past 4 weeks, how much did pain interfere with your normal work (including both work outside the home and housework)?

A. Not at all B. A little bit C. Moderately

D. Quite a bit E. Extremely

ENERGY AND EMOTIONS:

These questions are about how you feel and how things have been with you during the last 4 weeks. For each question, please give the answer that comes closest to the way you have been feeling.

23. Did you feel full of pep?

A. All of the time B. Most of the time C. A good bit of the time

D. Some of the time E. A little bit of the time F. None of the time

24. Have you been a very nervous person?

A. All of the time B. Most of the time C. A good bit of the time

D. Some of the time E. A little bit of the time F. None of the time

25. Have you felt so down in the dumps that nothing could cheer you up?

A. All of the time B. Most of the time C. A good bit of the time

D. Some of the time E. A little bit of the time F. None of the time

26. Have you felt calm and peaceful?

A. All of the time B. Most of the time C. A good bit of the time

D. Some of the time E. A little bit of the time F. None of the time

27. Did you have a lot of energy?

A. All of the time B. Most of the time C. A good bit of the time

D. Some of the time E. A little bit of the time F. None of the time

28. Have you felt downhearted and blue?

A. All of the time B. Most of the time C. A good bit of the time

D. Some of the time E. A little bit of the time F. None of the time

29. Did you feel worn out?

A. All of the time B. Most of the time C. A good bit of the time

D. Some of the time E. A little bit of the time F. None of the time

30. Have you been a happy person?

A. All of the time B. Most of the time C. A good bit of the time

31. Did you feel tired?

A. All of the time B. Most of the time C. A good bit of the time

D. Some of the time E. A little bit of the time F. None of the time

SOCIAL ACTIVITIES:

32. During the past 4 weeks, how much of the time has your physical health or emotional problems interfered with your social activities (like visiting with friends, relatives, etc.)?

A. All of the time B. Most of the time C. Some of the time

D. A little bit of the time E. None of the Time

GENERAL HEALTH

How true or false is each of the following statements for you?

33. I seem to get sick a little easier than other people

A. Definitely true B. Mostly true C. Don't know

D. Mostly false E. Definitely false

34. I am as healthy as anybody I know

A. Definitely true B. Mostly true C. Don't know

D. Mostly false E. Definitely false

35. I expect my health to get worse

A. Definitely true B. Mostly true C. Don't know

D. Mostly false E. Definitely false

36. My health is excellent

A. Definitely true B. Mostly true C. Don't know

D. Mostly false E. Definitely false

APPENDIX-E: የተሳታፊዎች ሶሺዮ ዲሞግራፊ እናክሊኒካዊ ባህሪያት
(Amharic version)

የመረጃመሰብሰቢያመሳሪያ (መጠይቅ)

ክፍል 1: የሀብረተሰብ እና ስነ-ሕዝብመረጃ

1. ጾታ;

☐ወንድ

☐ሴት

2. ዕድሜ; _____ ዓመት

3. የጋብቻሁኔታ;

☐ያላገባ

☐የተፋታ

☐ባለትዳር

☐ባልየሞተባት

4. BMI: _____ ኪግ/ሚ2 (ቁመት; ----------M) ክብደት; ----------ኪግ)

5. የትምህርትደረጃ;

☐ማንበብናመጻፍየማይችል

☐ማንበብእናመፃፍየሚችል

☐አንደኛደረጃትምህርትቤት (1-8ኛክፍል)

☐ሁለተኛደረጃትምህርትቤት(9 እና 10ኛክፍል)

☐ ሁለተኛ ደለጃ መሰናዶ ትምህርትቤት(11 እና 12ኛክፍል)

☐ክ 12 በላይ

☐ሌሎች (እባክዎይግለጹ); _____

6. ወርሃዊገቢ; _____ ኢ.ቲ.ቢ

7. ሃይማኖት;

☐ኦርቶዶክስ

☐ሙስሊም

☐ፕሮቴስታንት

☐ካቶሊክ

☐ሌሎች (እባክዎይግለጹ)፣ _____

8. በስትሮክየቤተሰብታሪክውስት አለ

☐አዎአለ።

☐የለም።

9 ስትሮክመኖሩ ከታወቀበት በውሃላምን ይክል ጊዘ ሆነ _____

APPENDIX-F: SF-36 QUESTIONNAIRE (Amharic version)

1. ጠቅለል አድርገው፤ ሲመለከቱት የጤንነትዎ ሁኔታ ምን ይመስላል?

ሀ. እጅግ በጣም ጥሩ ነዉ

ለ. በጣም ጥሩ ነዉ

ሐ. ጥሩ ነዉ

መ. ለክፉ አይሰጥም

ሠ. መጥፎ ነዉ

2. ከባለፈዉ አመት ጋር ሲያስተያዩት የአሁኑ የጤና ሁኔታዎ እንዴት ይገለጻል?

ሀ. ከአምና እጅግ በጣም ይሻላል

ለ. በተወሰነ መልኩ ከአምና ይሻላል

ሐ. ከአምና ጋርተመሳሳይ ነዉ/ለዉጥ የለዉም

መ. በተወሰነ መልኩ ከአምና ብሶብኛል

ሠ. ከአምና እጅግ በጣም ብሶብኛል ·

ከዚህ በታች የተዘረዘሩት ጥያቄዎች በየቀኑ የሚያደርጓቸዉ ናቸዉ ተብሎ ይገመታል።የአሁኑ የጤና ሁኔታዎ እነዚህን እንዳያደርጓቸዉ ይከለክልዎታል? መልሱ አዎ ከሆነ፣ መጠኑን እንዴት ይገልጹታል?

3. ከበድ ያሉ እንቂስቃሴዎች ለምሳሌ መሮጥ፣ከባድ እቃዎችን ማንሳትና ከበድ ያሉ

እንቅስቃሴዎች ላይ መሳተፍ ያሉ ስፖርቶችን መስራት ያቅቶታል?	ሀ. አዎ በጣም አቅቶኛል ለ. በመጠኑ አቅቶኛል ሐ. አይ፣ ያቃተኝ ነገር የለም
4. መጠነኛ ክብደት ያላቸዉን እንቅስቃሴዎች ማድረግ ለምሳሌ፤ ጠረጴዛ/ወንበር/የቤት ቁሳቁስ/ ከቦታ ወደ ቦታ ማንቀሳቀስ እና ቀለል ያሉ ስፖርቶችን ማከናወን ያቅቶታልን?	ሀ. አዎ በጣም አቅቶኛል ለ. በመጠኑ አቅቶኛል ሐ. አይ፣ ያቃተኝ ነገር የለም
5. አነስ ያለ ክብደት ያላቸዉን እቃ ማንሳት/መሸከም ለምሳሌ፤ አስቤዛ ፤ ቀለል ያሉ የቤት እቃዎችን ከቦታ ወደ ቦታ ማንቀሳቀስ ያቅቶታል?	ሀ. አዎ በጣም አቅቶኛል ለ. በመጠኑ አቅቶኛል ሐ. አይ፣ ያቃተኝ ነገር የለም
6. ብዙ ደረጃዎችን መዉጣት ወይም ዳገታማ ቦታዎችን መዉጣት ያቅቶታል?	ሀ. አዎ በጣም አቅቶኛል ለ. በመጠኑ አቅቶኛል ሐ. አይ፣ ያቃተኝ ነገር የለም
7. አንድ ደረጃ መዉጣት ወይም ጉብታ መዉጣት ያቅቶታል?	ሀ. አዎ በጣም አቅቶኛል ለ. በመጠኑ አቅቶኛል ሐ. አይ፣ ያቃተኝ ነገር የለም
8 መታጠፍ፣መንበርከክ፣ማጎንበስ ያቅቶታል?	ሀ. አዎ በጣም አቅቶኛል ለ. በመጠኑ አቅቶኛል ሐ. አይ፣ ያቃተኝ ነገር የለም

ሀ. አዎ በጣም አቅቶኛል

9. ከሁለት ኪሎ ሜትር በላይ በእግር መራመድ ያቅቶታል?

ለ. በመጠኑ አቅቶኛል

ሐ. አይ፣ ያቃተኝ ነገር የለም

ሀ. አዎ በጣም አቅቶኛል

10. ብዙ ሰፈሮችን በእግሮ ማቋረጥ ያቅቶታል?

ለ. በመጠኑ አቅቶኛል

ሐ. አይ፣ ያቃተኝ ነገር የለም

ሀ. አዎ በጣም አቅቶኛል

11. ከአንድ ሰፈር ወደ ሌላ አንድ ሰፈር በእግሮ መሄድ ያቅቶታል

ለ. በመጠኑ አቅቶኛል

ሐ. አይ፣ ያቃተኝ ነገር የለም

ሀ. አዎ በጣም አቅቶኛል

12. ራሶን ችለዉ ገላዎን መታጠብ ወይም ልብስ መልበስ ያቅቶታል?

ለ. በመጠኑ አቅቶኛል

ሐ. አይ፣ ያቃተኝ ነገር የለም

የአካላዊ ጤና ችግሮች

ሀ. አዎ ለ. አይደለም

ባለፉት 4 ሳምንታት ዉስጥ ከዚህ በታች ከተዘረዘሩት ችግሮች ዉሰጥ፤ አካላዊ ጤና ምክንያት በሥራዎ ወይም የየእለት ተግባሮት ላይ ያጋጠሞት ችግሮች አሉ?

13. ለስራ ወይም ለሌላ እንቅስቃሴ የሚጠቀሙትን ሰዓት ቀንሰዋል?

ሀ. አዎ

14. መስራት ከሚፈልጉት በታች ነው ያከናውኑት?

ለ. አይደለም

ሀ. አዎ

15. አንዳንድ ሥራዎችን እንዳይሰሩ ገድቦታል?

ለ. አይደለም

ሀ. አዎ

16. ስራዎን መስራት ከብዶታል ወይም ተጨማሪ አቅም ጠይቆታል?

ለ. አይደለም

· የጤናማ ስሜት ችግሮች

ባለፉት 4 ሳምንታት ውስጥ ጥሩ ስሜት ባለመሰማት ማለትም በድብርት ወይንም በብስጭት ምክንያት በስራ ቦታ አልያም በተለመደው የቀን ተቀን እንቅስቃሴ ላይ ከነዚህ ውስጥ ያጋጠሞት ችግሮች አሉ?

17. ለስራ ወይም ለሌላ እንቅስቃሴ ላይ የሚያዉሉትን ሰአት ቀንሰዋል?

ሀ. አዎ ለ. አይደለም

18. መስራት ከሚፈልጉት በታች ነው ያከናውኑት?

ሀ. አዎ ለ. አይደለም

19. ስራዎን እንደሌላ ግዜ በጥንቃቄ አልሰሩም?

ሀ. አዎ ለ. አይደለም

· ማህበራዊ ግንኙነት

20. ባለፉት 4 ሳምንታት ባጋጠምዎ የስሜት መረበሽ ምክንያት ከቤተሰቦ፣ ከጓደኛዎ ፣ከጎረቤቶ ወይም ከሌሎች ጋር ያሎት ማህበራዊ ግንኙነትን ምን ያህል ተጽዕኖ አሳድሮበታል?

ሀ. ምንም ተጽእኖ አላሳደረብኝም

ለ. በትንሹ

ሐ. በመጠኑ

መ. በከፍተኛ ደረጃ

ሠ. በጣም በከፍተኛ ደረጃ

.

21. ባለፉት 4 ሳምንታት ምን ያህል የሰውነት ህመም አጋጥሞታል?

ሀ. ምንም አላጋጠመኝም

ለ. በጣም ትንሽ

ሐ. በትንሹ

መ. በመጠኑ

ሠ. በከፍተኛ ሁኔታ

ሸ. በጣም በከፍተኛ ሁኔታ

22. ባለፉት 4 ሳምንታት ዉስጥ በሰዉነትዎ ዉስጥ የሚሰማዎ ህመም ሥራዎ ላይ ምን ያህል ተጽዕኖ ነበረዉ?

ሀ. ምንም ተጽኖ አልነበረዉም

ለ. በትንሹ

ሐ. በመጠኑ

መ. በከፍተኛ ሁኔታ

ሠ. በጣም በከፍተኛ ሁኔታ

ከዚህ በታች የተዘረዘሩት ጥያቄዎች ባለፉት 4 ሳምንታት እንዴት ይሰማዎት እና ነገሮች እንደት እንደነበሩ የሚጠይቁ ናቸዉ። እባክዎን ከታች ከተዘረዘሩት አማራጮች መካከል ከአርሶ ሁኔታ ጋር የሚቀራረበዉን አንዱን ይመልሱ

ባለፉት 4 ሳምንታት ምን ያህል ጊዜ

23. ከመጠን ያለፈ / እጅግ ከፍ ያለ ሀ. ሁልጊዜ

የደስታ ስሜት ተሰምቶታል?

ለ. በአብዛኛዉ ጊዜ

ሐ. በተወሰነ ጊዜ

መ. አንዳንድ ጊዜ

ሠ. በጣም ትንሽ ጊዜ

ሸ. በጭራሽ

24. ብስጩ ሆነ ያዉቃሉ?

ሀ. ሁልጊዜ

ለ. በአብዛኛዉ ጊዜ

ሐ. በተወሰነ ጊዜ

መ. አንዳንድ ጊዜ

ሠ. በጣም ትንሽ ጊዜ

ሸ. በጭራሽ

25. ምንም ነገር አያስደስተኝም ብለዉ የሀዘን ስሜት ተሰምቶት ያዉቃል?

ሀ. ሁልጊዜ

ለ. በአብዛኛዉ ጊዜ

ሐ. በተወሰነ ጊዜ

መ. አንዳንድ ጊዜ

ሠ. በጣም ትንሽ ጊዜ

ሸ. በጭራሽ

26. የተረጋጋና ሰላማዊ ስሜት ተሰምቶት ያዉቃል?

ሀ. ሁልጊዜ

ለ. በአብዛኛዉ ጊዜ

ሐ. በተወሰነ ጊዜ

መ. አንዳንድ ጊዜ

ሠ. በጣም ትንሽ ጊዜ

ሸ. በጭራሽ

27. ብዙ አቅም (ጉልበት) አሎት?

ሀ. ሁልጊዜ

ለ. በአብዛኛዉ ጊዜ

ሐ. በተወሰነ ጊዜ

መ. አንዳንድ ጊዜ

ሠ. በጣም ትንሽ ጊዜ

ሸ. በጭራሽ

28. ሀዘንና ጭንቀት/ የበታችነት ስሜት ተሰምቶት ያዉቃል?

ሀ. ሁልጊዜ

ለ. በአብዛኛዉ ጊዜ

ሐ. በተወሰነ ጊዜ

መ. አንዳንድ ጊዜ

ሠ. በጣም ትንሽ ጊዜ

ሸ. በጭራሽ

29. የመታከት ስሜት ተሰምቶት ያዉቃል?

ሀ. ሁልጊዜ

ለ. በአብዛኛዉ ጊዜ

ሐ. በተወሰነ ጊዜ

መ. አንዳንድ ጊዜ

ሠ. በጣም ትንሽ ጊዜ

ሸ. በጭራሽ

30. ደስተኛ ሰዉ ነበሩ?

ሀ. ሁልጊዜ

ለ. በአብዛኛዉ ጊዜ

ሐ. በተወሰነ ጊዜ

መ. አንዳንድ ጊዜ

ሠ. በጣም ትንሽ ጊዜ

ሸ. በጭራሽ

31. ድካም ተሰምቶት ያዉቃል? ሀ. ሁልጊዜ

ለ. በአብዛኛዉ ጊዜ

ሐ. በተወሰነ ጊዜ

መ. አንዳንድ ጊዜ

ሠ. በጣም ትንሽ ጊዜ

ሸ. በጭራሽ

· ማህበራዊ ግንኙነት

32.. ባለፉት 4 ሳምንታት ዉስጥ ምን ያህል ጊዜ የአካላዊ ጤና ችግር ወይም የስነ-ልቦና መረበሽ በማህበራዊ ግንኙነትዎ ላይ ለምሳሌ ከቤተሰብ፣ከጓደኞች፣ከጎረቤቶት እንድሁም ከሌሎች ጋር ያሎት ግኙኝነት ላይ ተጽእኖ አድርጎቦታል?

ከዚህ በታች የተዘረዘሩት ጥያቀዎች ለእርሶ ምን ያህል እውነት ወይንም ሃሰት ናቸዉ።።

33. ከሌላ ሰው ይልቅ በቀላሉ ለበሽታ ተጋላጭ ነኝ ሀ. በትክክል እውነት

ለ. በአብዛኛው እውነት

ሐ. አላውቅም

መ. በአብዛኛው ሃሰት

ሠ. በትክክል ሃሰት

34. እንደማንኛዉም ሰዉ ጤነኛ ነኝ

ሀ. በትክክል እውነት

ለ. በአብዛኛው እውነት

ሐ. አላውቅም

መ. በአብዛኛው ሃሰት

ሠ. በትክክል ሃሰት

35. የጤናዬ ሁኔታ እየተባባሰ እንደሚሄድ እጠብቃለሁ

ሀ. በትክክል እውነት

ለ. በአብዛኛው እውነት

ሐ. አላውቅም

መ. በአብዛኛው ሃሰት

ሠ. በትክክል ሃሰት

36. ጤናዬ እጅግ በጣም ጥሩ ነዉ

ሀ. በትክክል እውነት

ለ. በአብዛኛው እውነት

ሐ. አላውቅም

መ. በአብዛኛው ሃሰት

ሠ. በትክክል ሃሰት