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COLLEGE OF HEALTH SCIENCES

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HEALTH-RELATED QUALITY OF LIFE AND ITS ASSOCIATED FACTORS AMONG PATIENTS ON LONG-TERM WARFARIN THERAPY FOR ATRIAL FIBRILLATION AT SELECTED PUBLIC HOSPITALS, ADDIS ABABA ETHIOPIA, A CROSS-SECTIONAL STUDY

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ADDIS ABABA, ETHIOPIA

ADDIS ABABA UNIVERSITY, COLLEGE OF HEALTH SCIENCES, SCHOOL OF NURSING AND MIDWIFERY, DEPARTMENT OF NURSING, ADULT HEALTH NURSING POSTGRADUATE PROGRAM

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I, the undersigned MSc student, declare that the original work I have submitted, titled ‘‘**Health-Related Quality of Life and Its Associated Factors Among Patients on Long-Term Warfarin Therapy for Atrial Fibrillation at Selected Public Hospitals, Addis Ababa, Ethiopia**’’ (2024), prepared by Zenebu Masresha, satisfies the university's regulations and adheres to the accepted standards of originality and quality required for the Degree of Master of Science in Cardiovascular Nursing.

Submitted by:

Zenebu Masresha (BSc) _____ _____

Name of student Signature Date

This thesis work has been submitted for examination with my approval as an advisor.

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APPROVAL BY THE BOARD OF EXAMINATION

This thesis by Zenebu Masreshais accepted in its present form by the board of examiners as satisfying thesis requirement for the degree of masters of Science in Cardiovascular Nursing.

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STATEMENT OF DECLARATION

By my signature below, I declare and affirm that this thesis is my own work. I have followed all ethical principles of scholarship in the preparation, data collection, data analysis, and completion of this thesis. All scholarly material included in the thesis has been properly cited. I affirm that I have cited and referenced all sources used in this document. Every effort has been made to avoid plagiarism in the preparation of this thesis.

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ABBREVIATIONS AND ACRONYMS

AF	Atrial Fibrillation
BP	Blood Preasure
CAD	Coronary Artery Disease
CKD	Chronic Kidney Disease
EQ-5D-5L	EuroQol-5 Dimensions-5 Levels
GI	Gastrointestinal
HF	Heart Failure
HRQoL	Health-related Quality of Life
INR	International Normalized Ratio
LMICs	Low- and Middle-income Countries
LTC	Long-term Care
MCS	Mental Component Summary
NOACs	New Oral Anticoagulants
OACs	Oral Anticoagulants
SSA	sub-Saharan Africa
PCS	Physical Component Summary
QoL	Quality of Life
SF-36 and EQ-5D-5L	36-Item Short Form Survey
US	United States
VKAs	Vitamin K Antagonists
VTE	Venous Thromboembolism
WHOQoL	World Health Organization Quality of Life

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ABSTRACT

Background: Atrial fibrillation (AF) affects approximately 37.5 million people globally, with its prevalence increasing by 33% over the past two decades. This growing burden contributes to serious complications such as heart failure, stroke, and increased healthcare utilization. Warfarin remains a commonly used long-term anticoagulant for stroke prevention in AF patients, despite its management challenges. The chronic nature of AF and the demands of warfarin therapy can negatively affect patients' health-related quality of life (HRQoL).

Objective: To assess health-related quality of life and its associated factors among patients on long-term warfarin therapy for atrial fibrillation at selected public hospitals in Addis Ababa, Ethiopia, in 2025

Methods: An institution-based descriptive cross-sectional study was conducted from February 19 to March 19, 2025, among 401 randomly selected adult patients on warfarin therapy for at least 6 months. Data were collected using the validated Short Form-36 (SF-36) questionnaire through face-to-face interviews and medical chart was reviewed using prepared checklist. Data were collected by two trained nurses and one nurse was assigned as supervisor. Descriptive statistics summarized participant characteristics. Multiple linear regression analysis was performed using SPSS version 27 to identify factors associated with HRQoL. A p-value < 0.05 was considered statistically significant.

Results: Factors significantly associated with lower HRQoL scores (PCS and MCS) included older age, male gender, lower educational attainment, valvular AF, higher CHA2DS2-VASc scores, and taking more than two medications per day. For every 10-year increase in age, PCS and MCS scores decreased by 0.203 and 0.343 points, respectively. Male patients and those with valvular AF had significantly lower HRQoL scores compared to their counterparts.

Conclusion and Recommendations: This study found that age, sex, education level, AF type, stroke risk scores, and polypharmacy significantly impact HRQoL in warfarin-treated AF patients. Interventions focusing on modifiable factors, integrated care approaches, and patient-centered strategies are recommended to enhance quality of life in this population.

Keywords: Atrial Fibrillation, Health-Related Quality of Life, Warfarin, Ethiopia, SF-36

CHAPTER ONE

1. INTRODUCTION

1.1 Background

Atrial fibrillation a common cardiac arrhythmia, is associated with increased mortality rates; stroke, heart failure, hospitalization, and death are frequent outcomes for those with AF(1). AF is present in 37,574 million people globally (0.51% of the global population), and its prevalence has grown by 33% during the past 20 years (2). AF seems to have a higher prevalence in the general population than previously in sub-Saharan Africa (SSA). The community-based prevalence of AF was 4.3% and 0.7% in individuals aged ≥ 40 years and aged ≥ 70 years, respectively (3). According to a study conducted in Ethiopia, the overall prevalence of AF was 4.3% (4).

Patients with AF are five times more likely to have a stroke than people of the same age who have been in sinus rhythm for decades(5). The most prevalent arrhythmia, AF, accounts for a significant portion of the worldwide healthcare burden. Research has demonstrated that underlying AF accounts for one out of every six embolic strokes. Patients with AF had an embolic stroke risk of between 1.9 and 18.2% in the absence of anticoagulant therapy(6).

The most recent AF recommendations advocate vitamin K antagonists (VKAs) and new oral anticoagulants (NOACs) among the different antithrombotic and anticoagulant medicines. For many years, physicians have administered VKAs to treat both valvular and non-valvular AF patients in order to prevent thromboembolic events (7). Warfarin is a highly effective medicine for reducing the risk of stroke in patients with AF. Its safety and efficacy in preventing stroke are significantly impacted by how long it spends in the therapeutic range. A common VKAs used to keep people with AF from having embolic stroke is warfarin. The international normalized ratio (INR) is used to quantify the therapeutic efficacy of warfarin. The spectrum of interest for INR differs based on the anticoagulation indications (8).

Among AF patients, warfarin has been the anticoagulant most frequently used for stroke prophylaxis. A meta-analysis of multiple clinical trials revealed that individuals with AF who were treated with warfarin had a 64% lower risk of stroke. Warfarin is a highly effective

medication in lowering the risk of stroke (9). Despite thedrawbacks (intracranial hemorrhage, gastrointestinal (GI) bleed, hematemesis, intraocular bleeding, and hemarthrosis), warfarin is a widely used oral anticoagulant (OAC), mostly because it is readily available and reasonably priced. Due to the limited therapeutic index of warfarin, patients may require routine visits to medical institutions for INR monitoring and dose modification. Second, different people and even the same patients may require different daily maintenance doses of warfarin. Third, some foods, medications, and alcohol can have an impact on how warfarin is metabolized (10).

The term "health-related quality of life" (HRQoL) focuses on the impact of health on a person's ability to live a fulfilling life. HRQoL represents a broad concept of physical, psychological with social functioning and well-being that includes both positive and negative aspects. Patients on warfarin are becoming more aware of it because of improved healthcare and higher life expectancies (11).

Patients on warfarin often have a worse HRQoL because of lifestyle modifications, increased risk of bleeding, and subjectively no improvement in symptoms while taking the drug. In addition, their level of treatment satisfaction may have an impact on their HRQoL (12). For patients with chronic illnesses like AF, increasing and improving their level of satisfaction with their treatment plan is crucial. Because of this, patients on VKAs treatment need to see their doctors more frequently for outpatient checkups to monitor their INR and to follow dietary guidelines to reduce their intake of vitamin K, which negatively affects their HRQoL (13).

1.2 Statement of the Problem

AF is the most prevalent long-term rhythm problem. Given that it is a significant cardiovascular (CVS)risk factor for the broader community, its medical, social, and economic implications should be considered (14). Atrial fibrillation (AF) is present in 37.574 million people globally (0.51% of the global population), and its prevalence has grown by 33% during the past 20 years (2). This significant increase underscores the global burden of AF, which contributes to a substantial healthcare challenge worldwide (15). It is well known that as people age, AF becomes more common. By 2050, there will likely be twice as many people with AF as there already are. Furthermore, AF has been linked to men more frequently than women and is more common in white people than in black people(16). Also the burden of health-related quality of

life (HRQoL) and its associated factors among patients on long-term warfarin therapy for atrial fibrillation (AF) is a significant global concern. Atrial fibrillation is a common cardiac arrhythmia that affects millions of people worldwide, and the use of warfarin for long-term management of AF is widespread. However, the impact of AF and its treatment on the HRQoL of patients is substantial, as it can lead to physical limitations, psychological distress, and reduced overall well-being (17).

Patients on long-term warfarin therapy for AF often face challenges such as the need for regular monitoring, dietary restrictions, and the risk of bleeding complications, which can negatively impact their HRQoL. Additionally, factors such as age, comorbidities, socioeconomic status, access to healthcare, and cultural beliefs may further influence the HRQoL of these patients (12).

In Africa countries AF is also a significant health concern, and the use of warfarin for long-term management of AF is common. However, there is limited understanding of the HRQoL and its determinants among patients undergoing long-term warfarin therapy for AF in African countries. The unique sociodemographic, cultural, and healthcare system characteristics in these countries may influence the HRQoL of these patients differently compared to other regions (18).

It has been that AF is a prevalent cardiac arrhythmia in Ethiopia, However, the impact of AF and its treatment on the HRQoL of Ethiopian patients is substantial, as it can lead to physical limitations, psychological distress, and reduced overall well-being (19).

Patients on long-term warfarin therapy for AF in Ethiopia face challenges such as the need for regular monitoring, access to healthcare facilities for INR monitoring, dietary restrictions, and the risk of bleeding complications, which can negatively impact their HRQoL. Additionally, factors such as limited access to healthcare, socioeconomic status, cultural beliefs, and educational levels may further influence the HRQoL of these patients in Ethiopia (20).

Warfarin is only effective within its therapeutic range because to considerable inter- and intera-patient variability. Warfarin users may have lifestyle changes because of using the medication; these may include food limitations to reduce vitamin K consumption, anxiety when engaging in physical activity, and the requirement to closely follow the treatment plan (21). Additionally, patients' HRQoL may be significantly impacted by the difficulty of dose adjustments, the requirement for routine blood tests to monitor INR levels, as well as the dread of consequences,

such as the danger of mild or major bleeding or stroke (22). One significant aspect that could affect the doctor's prescription and the patient's use of warfarin medication is a reported decline in HRQoL.

Conversely, clinical trials have not examined HRQoL, instead concentrating on assessing the safety and effectiveness of anticoagulant medication. As HRQoL refers to an individual's perceived quality of life and self-satisfaction, which is influenced by their overall health state, it can be argued that there is a severe lack of focus on the HRQoL of AF patients.

The aim of this study was to investigate the HRQoL and its associated factors among patients on long-term warfarin therapy for atrial fibrillation. Atrial fibrillation is a common cardiac arrhythmia, and warfarin is a widely used anticoagulant in its management. However, the impact of long-term warfarin therapy on the HRQoL of these patients is not well understood. This study seeks to identify the factors that may influence HRQoL in this patient population, including demographic and clinical variables. Understanding these factors can help healthcare providers optimize the care and support provided to patients on long-term warfarin therapy for atrial fibrillation.

1.3 Significance of the Study

This study will play a significant role in highlighting the health-related quality of life (HRQoL) of patients with atrial fibrillation (AF) on long-term warfarin therapy. The findings serve as an important alert for healthcare providers across the country to give this issue due attention, especially given the lack of prior studies in this area.

The research findings from the current study serve as a preliminary data for researchers and clinician to further investigate the HRQoL using various tools for deepening the understanding. Additionally, the outcome will serve as an inputfor local guidelines for long-term warfarin patients' care by policy makers and HCPs.

CHAPTER TWO

2. LITERATURE REVIEW

2.1 Introduction

The literature review section incorporated three components: theoretical review, empirical review, and the conceptual framework. In the theoretical review, health-related quality of life and long-term care with warfarin for patients were included.

2.2 Health-related Quality of Life

Because it encompasses a variety of dimensions and typically includes the patient's perspective, HRQOL is an exceptionally persuasive indicator of the effectiveness or process of health care (23). Health status, such as physical, psychological, and social functioning, is included in HRQOL. Impairment, symptoms, and disability may also be measured. But since a person's health is more than just the absence of disease, HRQOL tests typically take into account perceptions, role functions, social health, and overall wellbeing. It may also measure characteristics of the environment, sexual function, spirituality, and life satisfaction. HRQOL is by definition narrower than total QOL (24). On the other hand, some writers believe that the more comprehensive concept of QOL is essential to recovery. The definition of HRQOL is constantly being expanded and redefined by researchers and theorists. In certain instruments, such as the WHOQOL, a QOL measure used by the World Health Organization, the construct is starting to more closely resemble overall QOL (25).

2.3 Warfarin for Long-term Care of Patients

For individuals with AF, long-term oral anticoagulation therapy is crucial for preventing strokes and other thromboembolic events. Warfarin has been used to prevent thromboembolic stroke in stroke survivors or individuals with atrial fibrillation (AF); nonetheless, antiplatelet medicines are the first line of treatment for non-cardioembolic stroke survivors without AF (26). According to a 2009–2011 study conducted across 19 nations, 42.5% of patients at low risk had received anticoagulant medication, compared to 38.0% of patients with high risk of stroke who didn’t take

(27).Less than half of high-risk patients in the US were receiving OAC therapy(28). According to a few studies, the estimated rates of anticoagulant use in China range from 2.7% to 50%(29), 26%–44% in Pakistan(30), 16% in Malaysia(31), and in Brazil: 46.7%–57.8%, Mexico: 36.8%, Argentina: 72.7%, South Africa: 33% (32).

The result of a retrospective study conducted at Medical Ward of HFSUH from Medical record of patients' who take anticoagulants from March 30, 2014 to March 30, 2016 only 87 patients over a period of 2 years were on anticoagulant and laboratory monitoring which were very few (33). Whatever an improved habit of using warfarin will reduce the potential complication of thrombotic effects; its continuous use will also affect the health related quality of life of the patient. A study done in Thailand showed that prolonged warfarin medication may cause patients' daily routines to change. It may also necessitate dietary limitations on the use of herbs and vitamin K because these factors may modify the INR and impact the therapeutic effect, both of which might lower HRQoL (34). Also this study has revealed advanced age which is greater that sixteen significantly factors diminishing the HRQoL.

2.4 Factors Affecting HRQoL

2.4.1 Socio-demographic characteristics

AF is the most common sustained cardiac arrhythmia, with an estimated prevalence of 0.4% to 1% in the general US population. Its age-specific prevalence is highest in people 85 years and older (11%–12%) and substantially lower in those 55 years and younger (0.1%–0.2%). AF is more prevalent in men than in women, both overall and within various age categories.(35). A study from Turkey showed the age-standardized incidence and prevalence rates of AF were 38.2 and 481.5 per 100,000 individuals, respectively (36).Between 1990 and 2010, there was a 3.4% increase in the estimated prevalence of AF in Sub-Saharan Africa, with rates for men and women being 659.8 and 438.1 per 100,000 population, respectively (37).

In a community-based cross-sectional study done in Jimma revealed the overall prevalence of AF was 4.3%. Another study conducted in Jimma, Ethiopia showed that the prevalence increases with advancing age. It was 5.1% in people aged 40–49 year where as 6.9% in those whose age was ≥80 year. The mean age of individuals with AF was approximately 62.6 year. Also its

prevalence with respect to sex is revealed as male sex is with a high chance of developing atrial fibrillation than female sex; men as compared to females with reported male: female rates of appx 1.1% vs 0.8% (38).

Common cardiac arrhythmia atrial fibrillation (AF) is linked to a lower quality of life (HRQoL) in terms of health. According to the World Health Organization's study on global ageing and adult health; male older adults reported a better QoL than female older adults across all of the countries. The associations between QoL and sociodemographic factors, health-related factors, and social support factors among older adults differed according to country (39). Health related quality of life (HRQoL) for patients with different atrial fibrillation (AF) types was done in Switzerland and has showed that advancement in age and being women is highly associated with poor HRQoL of patients with atrial fibrillation (40).

Also a study done in Swedish and Danish showed that HRQoL in atrial fibrillation patients is worse among female gender that that of male but according to this study differences between age groups were less pronounced (41). In Spanish Female sex, being older, comorbidity, advanced symptoms, and recent hospitalization are determinant factors in health-related quality of life in cardiovascular disease patients (42). A study done in Iraqa significant correlation was found between quality of life and the demographic characteristics of age, sex, education level, marital status. In which younger patients, men, married and single patients (in comparison with widowed and divorced patients), patients with a high-school diploma and higher education had a better quality of life compared to the other groups (43).

A study conducted in two tertiary-level hospitals in Addis Ababa, Ethiopia, found that sociodemographic factors such as age and employment had a strong influence on HRQoL, while gender had a weak influence. Specifically, unemployed individuals had lower HRQoL than employed individuals (44). A study was conducted in Wolaita Zone, Southern Ethiopia, which revealed that HRQoL was significantly associated with gender, age, family size, occupation, and residency. This study showed that females were found to experience emotional symptoms and reduced total HRQoL compared to males (45).

A study conducted in the United States found that age and sex variables have a direct effect on the dose of warfarin during long-term use, with females not tolerating high doses of the drug as

well as males. Age was also found to have a significant effect on warfarin dosing, with increasing age associated with a reduced maintenance dosage of warfarin. However, women did require a lower dose than men (46).

A study in Birmingham demonstrated that middle-aged patients require a 10% reduction in warfarin dose, and for elderly patients, an additional 10% reduction in warfarin dose is needed. The assessment showed that middle-aged and elderly patients have better anticoagulation control compared to young warfarin users. This indicates that older patients are more sensitive to warfarin than younger patients (47).

A study conducted in Kuwait showed that low educational status and old age are jointly related to the poor habit of taking warfarin. Patients who live alone have a better habit of taking warfarin compared to those living in joint families. It is not difficult to understand that the larger the number of family members living together, the smaller the private space available for personal life. An elderly woman with limited education, living in a large or joint family, taking several other medications for co-morbidities, and dependent on others, tends to have a poor habit of taking warfarin (48).

2.4.2 Clinical variables

2.4.2.1 The effect of comorbidities on HRQoL

Research findings indicate that the relationship between HRQoL and comorbid disorders is stronger than that between AF clinical symptoms, with HRQoL being more significantly impacted by comorbidities (24). Additionally, HRQoL was generally lower in patients who had recently received a diagnosis but returned to normal after receiving conventional care. Further investigation revealed that, regardless of the duration of the disease, AF comorbidities had a significant impact on HRQoL (40).

Individuals suffering from atrial fibrillation (AF) are more likely to have multiple co-existing diseases, increasing their risk of hospitalization and death. These conditions include high blood pressure, heart failure, coronary artery disease, obesity, and chronic renal disease. These comorbidities impair the patient's quality of life and have a detrimental effect on survival (49).

Heart failure is a common comorbid condition among patients with AF. Atrial fibrillation is associated with a three-fold increased risk of incident HF. The burden of heart failure associated with AF has increased substantially, with globally 2.6% of the heart failure burden being associated with AF. A randomized controlled trial involving 168 centers across 11 countries (US, Poland, Canada, the Netherlands, Czech Republic, Hungary, Germany, Ukraine, Argentina, UK, and Slovakia) also revealed a correlation between a larger annual number of HF hospitalizations and a lower probability of having high TTR. Suboptimal quality of warfarin anticoagulation control was independently linked to lower health-related quality of life and a higher rate of hospitalization for HF in patients with systolic dysfunction who were in NYHA class III/IV (50).

A study done in Swede showed that People with HF often experience episodic symptoms of congestion, functional deterioration and poor health related quality of life (HRQoL) (51). A multination cohort study that included Africa stated that HRQL in HF is a strong and independent predictor of mortality (52). In Ethiopia a, Wolaita the study revealed that the HRQoL for patients with heart failure was found to be low. Besides the socio demographic variables it is significant factors for the HRQoL of patients with heart failure (45).

Hypertension throughout adulthood leads to cardiac structural and electrical remodeling that predisposes to AF (53). Besides, the coexistence of hypertension and AF can greatly increase the risk of adverse outcomes including log term hospitalization which may affect the quality of life of the client. The prevalence of AF varies from 1.1% to 5.8% in Western hypertensive population (54).The result of a community study done in Kenya, Nigeria, Tanzania, and Uganda shows that quarter of the participants with AF (25·4%) had hypertension.

A heart arrhythmia that is frequently seen in CKD is atrial fibrillation (AF). When individuals with chronic kidney disease (CKD) have AF, their renal dysfunction worsens, which in turn causes more AF to be generated (55). A study done in Swede showed that All HRQoL dimensions deteriorated significantly with CKD stages with the lowest scores in CKD 5. The largest differences between the patient groups were seen in 'physical functioning', 'role physical', 'general health' and in physical summary scores (PCS) (56). In Africa a study showed that CKD is highly prevalent amongst AF patients and associated with several clinical comorbidities. Importantly, CKD in AF patients is an independent risk factor for stroke and death. After

adjusting for CKD, good quality anticoagulation control (TTR > 70%) was an independent predictor for a lower risk of stroke, death and major bleeding (57).

As people aged, they are more likely to develop coronary artery disease (CAD) and atrial fibrillation (AF). And frequently these two disease presented at the same time. This reciprocal association is further supported by the fact that AF is far more common in CAD patients than in age-matched persons without CAD. By encouraging re-entry and raising atrial tissue excitability due to ischemia and electrical inhomogeneity. Patients with coronary artery disease (CAD) are known to have a lower quality of life (QOL) (58)and CAD has a negative impact on atrial fibrillation (AF) (59). That has a negative impact on health related quality of life of the patients. A study done in Iraq showed that after a diagnosis of CAD, the QoL of patients may become disrupted (60).

Because weight loss and lifestyle changes are advantageous and a crucial component of treatment for obese individuals with persistent atrial fibrillation, the link between high BMI and the occurrence of atrial fibrillation is also clear(61).Obesity has been demonstrated to change hemodynamics, including left atrial enlargement, which is known to cause atrial fibrillation, and structural remodeling of the heart (62). obesity increasing the risk of atrial fibrillation by 50% (63).

2.5 Conceptual framework

Various factors can influence the Health-Related Quality of Life (HRQoL) of patients with Atrial Fibrillation (AF). In the current study, sociodemographic factors (such as age, sex, marital status, educational status, monthly income) and clinical characteristics (including comorbidities like heart failure, high blood pressure, chronic kidney disease, coronary artery disease) of AF patients on long-term warfarin therapy are being considered as potential factors affecting the HRQoL of the participants (39,48,52, 56).

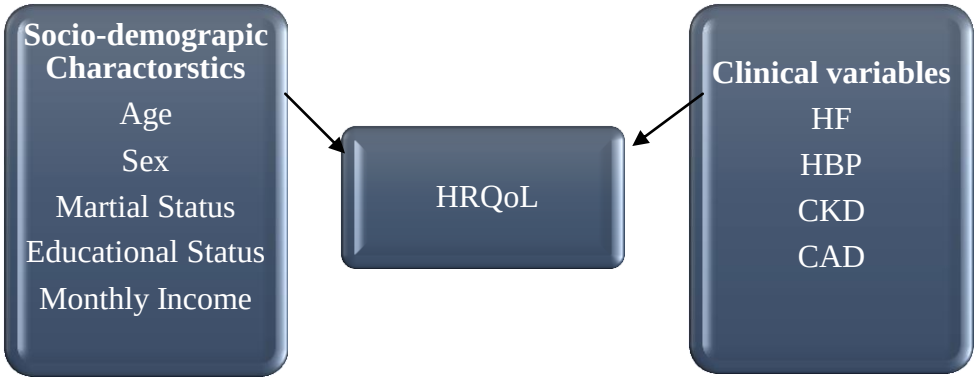

Fig 1: Conceptual framework used for the assessment health-related quality of life of patients on long-term warfarin therapy for atrial fibrillation in selected public hospitals, Addis Ababa Ethiopia, 2025

CHAPTER THREE

3 OBJECTIVES OF THE STUDY

3.1. General Objective

- To assess the health-related quality of life and its associated factors among patients on long-term warfarin therapy for atrial fibrillation at selected public hospitals, Addis Ababa, Ethiopia.

3.2. Specific Objectives

- To assess the health-related quality of life among patients on long-term warfarin therapy for atrial fibrillation at selected public hospitals, Addis Ababa, Ethiopia.
- To assess factors associated with health-related quality of life among patients on long-term warfarin therapy for atrial fibrillation at selected public hospitals, Addis Ababa, Ethiopia.

CHAPTER FOUR

4 METHODS

4.1. Study Setting

The current study was conducted in two public hospitals located in Addis Ababa, Ethiopia: St. Paul's Hospital Millennium Medical College (SPHMMC) and Tikur Anbessa Specialized Hospital (TASH). The reason for selecting these two hospitals is their high flow of patients with diverse sociodemographic backgrounds. Patients with varying economic statuses, educational backgrounds, and so on come to these hospitals for cardiac follow-up.

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) (64).

According to data obtained from the TASH nursing directorate office, it is the largest tertiary care referral and teaching hospital in Ethiopia, with 700 beds. Various healthcare workers (HCWs), including general practitioners, specialists, nurses, medical laboratory technologists, and pharmacists, are part of the TASH workforce, serving the community comprehensively. The hospital has 3021 active staff members. TASH annually serves around 589,020 patients, with 41,220 receiving emergency services, approximately 525,888 attending OPD, 21,912 admitted as inpatients, and 8067 of them being cardiac patients (as inpatients), with a total of 36,754 cardiac outpatients. The study was conducted from February 19 to March 19, 2024.

4.2. Study design

An institutional-based descriptive quantitative cross-sectional study design was implemented.

4.3. Population

4.3.1. Source population

All adult cardiac patients who have follow-up at SPHMMC and TASH cardiac follow-up Clinic are the source population.

4.3.2. Study population

The study population included all patients with Atrial Fibrillation who were on Warfarin therapy and had a minimum of 6 months of follow-up at SPHMMC and TASH cardiac follow-up clinic during the data collection period and who could participate voluntarily in the study. This requirement was necessary to assess the health-related quality of life effects, as continuous drug intake for at least 6 months was needed.

4.3.3. Study subjects

An individual who was visiting those hospitals for their follow-up and has been on warfarin therapy for at least the last 6 months.

4.4. Eligibility Criteria

4.4.1. Inclusion Criteria

Cardiac patients who have developed Atrial Fibrillation, have been on Warfarin therapy for a minimum of 6 months, are aged ≥18 years, and attend SPHMMC and TASH cardiac follow-up clinic during the data collection period, and can give consent, were included in the study.

4.4.2. Exclusion Criteria

Patients who were seriously ill and unable to communicate at the time of the data collection period, those with a cardiac condition but not on warfarin, and those on warfarin for less than 6 months and aged under 18 were excluded from the study.

4.5. Sample Size Determination

The sample size for the study was determined using the single population proportion formula. Taking the total HRQoL score, which was 46.37 in Wolaita, the sample size was calculated to be 401(44).

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

$$n = \frac{(1.96)^{2}\,(0.4637)(1-0.4637)}{(0.05)^{2}} = \frac{0.9553}{0.0025} = 382.1 \sim 382$$

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 401

4.6. Sampling Techniques

A sample of 401 was allocated proportionally to two selected hospitals, which were purposively chosen among the Federal hospitals for having well-established and long-running cardiac clinics. Based on the data collected from the cardiac outpatient department, the total population of cardiac patients attending their healthcare in the selected hospitals was estimated at 68,651. The proportional allocation of the sample to each hospital was calculated based on the total number of cardiac patients who have follow-up in their Hospital units. The final proportional sample, as depicted in the figure 2 below, was determined using a simple random sampling technique to select the study participants.

The proportional value was calculated with the formula:

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

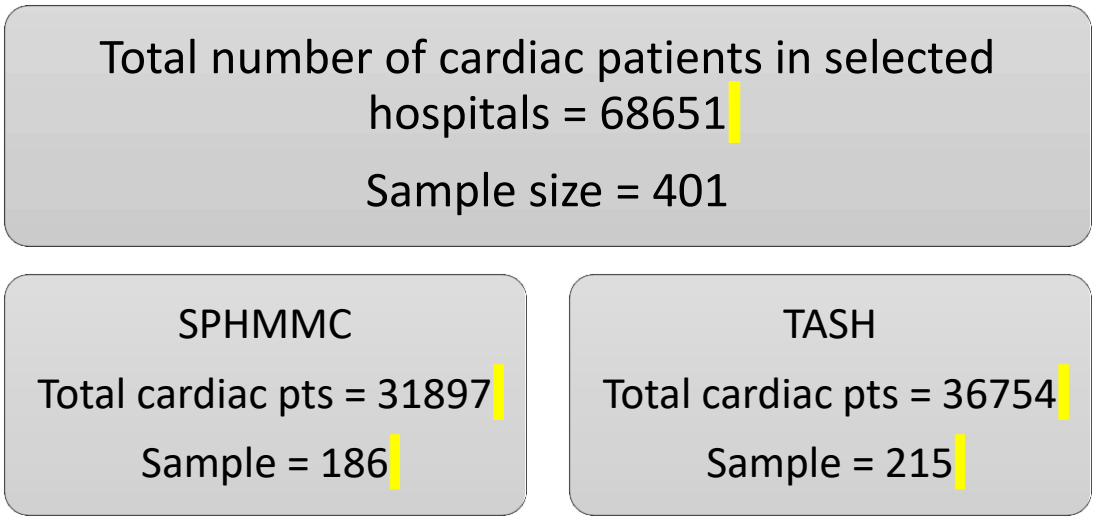

Fig 2: Proportional presentation of the sample for the health-related quality of life of patients on long-term warfarin for atrial fibrillation in selected government hospitals, Addis Ababa, Ethiopia, 2024.

4.7. Study Variables

4.7.1. Dependent variables

Health Related Quality of Life

4.7.2. Independent variables

Socio-demographic characteristics (age, sex, religion, residence, occupational status, educational status, marital status, income status).

Clinical variables (the presence of other medical cases other than atrial fibrillation).

4.8. Operational Definitions

Patients on long-term Warfarin: -Long-term use of warfarin by patients with chronic conditions such as valvular atrial fibrillation or mechanical valve replacement for at least 6 months.

HRQoL based on SF-36: - The SF-36 consists of eight scaled scores, which are the weighted sums of the questions in their respective sections. Each scale is directly transformed into a 0-100 scale under the assumption that each question carries equal weight. A lower score indicates greater disability. Lower scores indicate more disability (below 50 in both MCS and PCS), while higher scores (50 or above in both MCS and PCS) indicate less disability.

4.9. Data Collection Tools and Procedures

4.9.1. Data collection tools

The standard HRQoL tool is divided into two parts: socio-demographic and clinical questions. The demographic section explores the detailed socio-demographic background of the participants, while the clinical part contains questions about comorbidities that may be drawn from the patient's medical chart.

Short Form-36 (SF-36): The SF-36 is a health status profile designed to measure the health status and outcomes of patients. One of the most reputable and extensively validated tools is the Short Form 36, or SF-36 (Cronbach's alpha = 0.73) (65).

The 36 questions on the SF-36 are intended to reflect 8 domains of health, including physical functioning, physical role, pain, general health, vitality, social function, emotional role, and

mental health. The categories of physical role and emotional role reflect performance at the activity and participation levels. The SF-36 has been found to be reliable and valid for measuring health-related quality of life in individuals with several chronic health conditions and across various countries. Specifically, the physical functioning domain of the SF-36 measures mobility disability in several patient populations.

4.9.2. Data collection procedures

The data collection (DC) process was organized and led by the PI through face-to-face interviews to extract pertinent data from the participants and by reviewing their medical charts for relevant information. Before commencing the data collection process, the study objectives were clearly explained to the participants, and all participant rights were outlined. The data collected were kept confidential within the DC team, and personal identifiers were considered during data interpretation. Two trained data collectors (nurses) and one supervisor were recruited to participate in the data collection process. A one-day training session was conducted for the data collectors before initiating data collection to ensure their understanding of the DC tools sections.

4.10. Data Quality Control Measures

Before data collection, the primary investigator ensured the appropriate study design, selected study participants, and organized the tools accordingly. The questionnaire was translated into Amharic, Ethiopia's national language, by legally accepted translators since data collection was in Addis Ababa. It was then back-translated to English for consistency. A pretest was conducted on 5% of the samples at St. Peter Hospital, and necessary modifications were made based on validity checks. Nurses conducted the data collection after receiving one day of training, supervised by a trained supervisor. Data collectors gathered information from patients and their charts using the SF-36 standard HRQoL assessment questionnaires. The supervisor ensured the completeness and appropriateness of the collected data. Before entering the data into SPSS software for analysis, completeness checks were conducted daily, and any incomplete data were replaced.

4.11. Data Analysis

Data collection for this study utilized Kobo Toolbox, a mobile data collection platform, with the collected data subsequently exported to SPSS version 27.0 for thorough data cleaning and

analysis. The analysis employed both descriptive and inferential statistics. Descriptive statistics were instrumental in summarizing the data, highlighting central tendencies and variability through percentages, frequencies, mean, and standard deviation. Percentages delineated proportions of participants across different categories, while frequencies provided counts within each category. Mean and standard deviation acted as measures of central tendency and variability, respectively.

The Short Form-36 (SF-36) health survey uses the Likert method of summated ratings to construct its items and dimensions. Each item is scored on a Likert scale, and the raw scores for each of the eight SF-36 dimensions are calculated by summing the individual item scores.

The determinant factors for the two summary measures (PCS and MCS) were determined using the linear regression model. Before analysis, the fulfillment of assumptions for linear regression was checked. Diagnostic tests conducted on the data indicated that the assumptions necessary for regression analysis had been met. The plot of standardized residuals versus standardized predicted values displayed no discernible funneling, suggesting homoscedasticity. Additionally, the P-P plot revealed that the dots were closely aligned with the diagonal line, indicating conformity to normality assumptions. Multicollinearity was assessed through collinearity statistics, which demonstrated no significant multicollinearity among independent variables, as evidenced by VIF scores below 4 and tolerance scores above 0.1.

P-values less than 0.25 in simple linear regression were used as a cutoff point for selecting independent variables eligible for multiple linear regressions. A p-value less than 0.05 in the multiple linear regression analysis was considered an independently associated factor for health-related quality of life.

4.12. Ethical Considerations

Ethical approval was obtained from the Ethical Review Board with protocol number (CHS/NSG/79/2016/24) of the School of Nursing, College of Health Sciences (CHS), Addis Ababa University (AAU), along with a reference number. A letter was then written by the Dean's Office of the School of Nursing to obtain permission from SPHMMC, TASH, and SPSH hospitals for conducting the study. Those who declined participation were excluded.

Participation did not offer any benefits to the participants. Confidentiality was maintained by assigning anonymous codes and using code numbers instead of participants' names.

4.13. Dissemination of Results

The findings of this study will be disseminated to Addis Ababa University, the School of Nursing, and the two hospitals involved, all of which will receive the final thesis report. This report is expected to contribute to the teaching and professional development of healthcare providers. With the necessary permissions, the principal investigator will also present the research findings to the hospital communities. To reach a wider audience, the results will be published in a reputable scientific journal.

CHAPTER FIVE

5. RESULTS

5.1. Socio-demographic Characteristics of Patients

The following table provides demographic data in percentages and numbers for each: age, gender, marital status and education level. Gender distribution shows that the majority are female (67.1%). Age distribution differs among the groups with the highest percentage falling within the 56-65 (22.0%) category of age. Marital status distribution shows most married respondents at around 53.4% and 5.7% counted divorced respondents. Educational history vary with most holding diploma degree (30.1%) followed by secondary school leavers (22.5%).

Table 1: Socio-demographic characteristics of Patients on Long-term Warfarin Therapy for Atrial Fibrillation at Selected Public Hospitals, Addis Ababa Ethiopia (N = 386).

Variables	Category	N	%
Gender	Male	127	32.9
	Female	259	67.1
Age (in Years)	18-25	50	13.0
	26-35	54	14.0
	36-45	73	18.9
	46-55	42	10.9
	56-65	85	22.0
	66-75	64	16.6
	≥ 76	18	4.7
Marital Status	Single	104	26.9
	Married	206	53.4
	Divorced	22	5.7
	Widowed	54	14.0
Educational Status	Unable to read & write	6	1.6
	Able to read & write	48	12.4
	Primary school (Grades 1-8)	46	11.9
	Secondary school (Grades 9-10)	87	22.5
	Preparatory school (Grades 11-12)	83	21.5
	Diploma, degree and above	116	30.1

5.2. Clinical Characteristics of Patients

Major outcomes of this study are that 58.5% were Nonvalvular Atrial Fibrillation. Common comorbidities that were present among patients were Chronic Rheumatic Valvular Heart Disease (25.9%), Hypertension (14.8%), and Hypertensive Heart Disease (11.7%). Additionally, Cardiomyopathy (8.3%), Diabetic Mellitus (7.0%), and Hyperthyroidism (6.2%) were present in a large percentage of patients. Comorbidities are heterogenous in terms of range, with the most common occurrence being as follows: hypertension (14.8%), CRVHD (25.9%), and hypertensive heart disease (11.7%). Distribution of CHA2DS2-VASc scores indicates that the majority of the patients belong to the intermediate-risk category, of which 70.2% have a score of 2. As for Number of Medications per Patient, the majority (51.0%) received more than five medications, followed by 3-4 (45.3%), 1-2 (1.6%), and few with 5 (2.1%) (Table 2).

Table 2: Clinical characteristics of Patients on Long-term Warfarin Therapy for Atrial Fibrillation at Selected Public Hospitals, Addis Ababa Ethiopia (N = 386).

Variables	Category	N	%
Types of AF	Nonvalvular	226	58.5
	Valvular	160	41.5
Comorbidities	Asthma	9	2.3
	Cardiomyopathy	32	8.3
	CRVHD	100	25.9
	Degenerative valvular heart disease	23	6.0
	Hypertension	57	14.8
	Hypertensive Heart Disease	45	11.7
	Hyperthyroidism	24	6.2
	Ischemic Heart Disease	9	2.3
	Pulmonary Hypertension	5	1.3
	Stroke	26	6.7
	Valve Replacement	25	6.5
	Others	4	1.0
CHA2DS2-VASc Score	1	41	10.6
	2	271	70.2
	3	12	3.1
	>=3	62	16.1
Number of Medications per Patient	1-2	6	1.6
	3-4	175	45.3
	5	8	2.1
	>5	197	51.0

5.3. Clinical Diagnosis and Classification of Atrial Fibrillation

Atrial fibrillation (AF) in the subjects of the studies was diagnosed based on a combination of clinical evaluation and electrocardiographic (ECG) findings, as noted in patients' medical charts.

Patients were divided into valvular and non-valvular AF groups based on the underlying cardiac pathology. Valvular AF, typically seen in the setting of rheumatic mitral valve disease or with mechanical heart valves, was seen in 41.5% (n = 160) of patients. Non-valvular AF, comprising 58.5% (n = 226), included patients with no valvular pathology and those with hypertensive heart disease, cardiomyopathy, or lone AF. Classification was guided by echocardiographic findings and expert opinion as recorded in the clinical records of the patients.

5.4. Mean Scores for the Eight SF-36 Domains

The mean scores, standard deviations, and 95% confidence intervals for the eight SF-36 domains and the two summary measures (PCS and MCS) are presented below. The Physical Functioning domain had a mean score of 65.04, Role-Physical scored 48.77, and Bodily Pain had a mean score of 50.06. The PCS had an overall mean score, indicating the participants' physical health status. The MCS also had a mean score, indicating the participants' mental health status. This table provides a comprehensive overview for scientific analysis of the SF-36 survey results in this specific patient population.

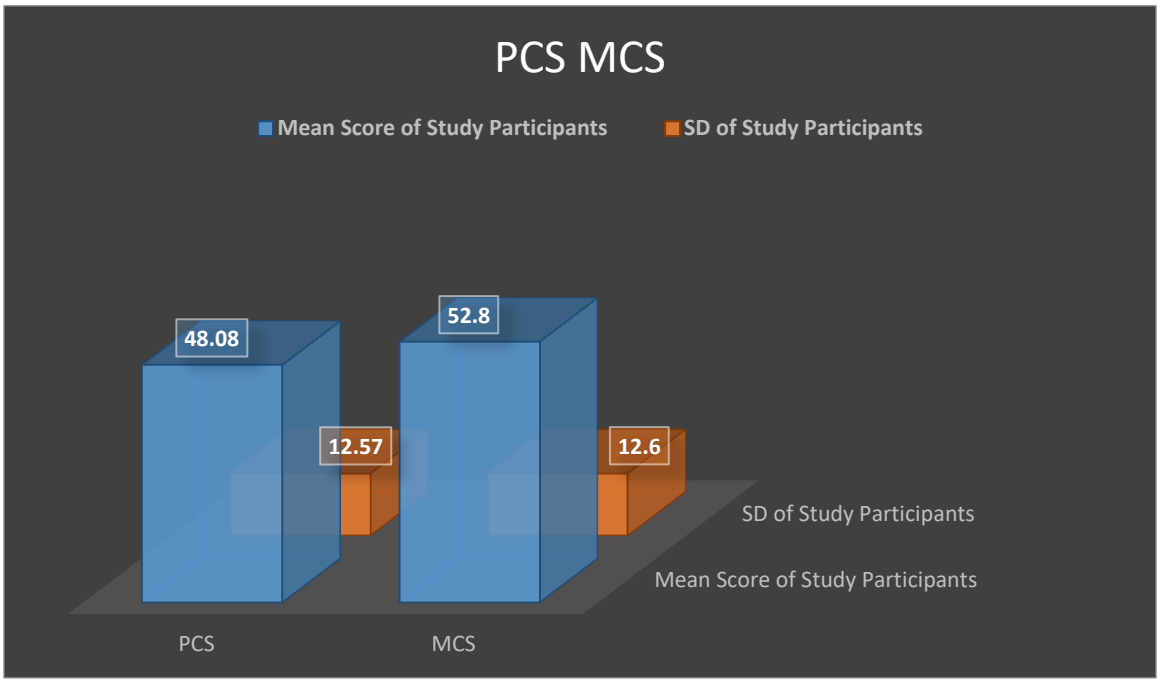

Fig 3: Summary of health-related quality of life using PCS and MCS measures

Table 3: Mean Scores for the Eight SF-36 Domains and the Two Summary Measures (PCS and MCS) of Patients on Long-term Warfarin Therapy for Atrial Fibrillation at Selected Public Hospitals, Addis Ababa Ethiopia (N = 386).

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	65.04	18.04	63.22	66.86
RP	48.77	44.03	44.36	53.18
BP	50.06	12.13	48.85	51.28
GH	28.43	12.04	27.23	29.64
VT	49.74	6.94	49.05	50.44
SF	57.71	10.95	56.61	58.80
RE	50.35	45.60	45.78	50.38
MH	53.42	5.78	52.84	54.00

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.

5.5. Factors associated with HRQOL

Table 4 indicates multiple linear regressions revealed that older age, male sex, lower educational attainment, valvular atrial fibrillation, higher CHA2DS2-VASc scores, and taking more than two medications per day are significantly associated with lower health-related quality of life, as measured by the SF-36 Physical Component Score (PCS) and Mental Component Score (MCS), in patients on long-term warfarin therapy for atrial fibrillation. For every 10-year increase in age, PCS scores decrease by 0.203 points ($p<0.001$) and MCS scores decrease by 0.343 points ($p<0.001$). Males have significantly lower PCS scores than females, with a mean difference of 0.199 points ($p<0.001$).

Table 4: Regression Coefficients of the Determinant Factors for Summary Measures of SF-36 Resulted from Multiple Linear Regressions of Patients on Long-term Warfarin Therapy for Atrial Fibrillation at Selected Public Hospitals, Addis Ababa Ethiopia (N = 386).

Variables	PCS[a]				MCS[b]			
	B	95% CI		p-value	B	95% CI		p-value
		Lower	Upper			Lower	Upper	
Age (Ref= (18-25 Years Old)								
26-35 Years Old	-.069	-6.744	1.759	.250	-.140	-.458	-9.671	.031*
36-45 Years Old	-.155	-8.941	-.988	.015*	-.206	-2.315	-10.933	.003*
46-55 Years Old	-.099	-8.526	.542	.084	-.132	-.411	-10.236	.034*
56-65 Years Old	-.203	-10.007	-2.286	.002*	-.152	-.444	-8.810	.030*
66-75 Years Old	-.373	-16.674	-8.497	<0.001*	-.343	-7.183	-16.043	<0.001*
≥ 76 Years Old	-.486	-34.882	-22.974	<0.001*	-.321	-12.707	-25.610	<0.001*
Sex (Ref=Female)								
Male	-.199	-7.939	-2.683	<0.001*	-.058	-4.244	1.122	0.253
Educational status (Ref=Unable to read & write)								
Able to read & write	.206	-2.414	18.091	.134	.187	-3.088	17.378	.171
Primary school (Grades 1-8)	.244	-.839	19.716	.072	.239	-.974	19.541	.076
Secondary school (Grades 9-10)	.438	3.156	23.144	.010*	.294	-1.117	18.832	.082
Preparatory school (Grades 10-11)	.560	7.105	27.124	.001*	.479	4.668	24.649	.004*
Diploma degree and above	.615	6.931	26.757	.001*	.605	6.722	26.510	.001*
Types of AF								
Valvular AF	.338	6.203	11.016	<0.001*	.364	6.909	11.684	<0.001*
CHA2DS2-VASc Score (Ref=C Score 1)								
2	-.322	-12.803	-4.883	<0.001*	-.397	-14.915	-6.934	<0.001*
3	-.241	-25.179	-9.666	<0.001*	-.239	-25.119	-9.487	<0.001*
>=3	-.406	-18.650	-9.135	<0.001*	-.237	-12.924	-3.337	.001*
Number of Medications per Patient (Ref= 1-2 NMP)								
3-4	-.726	-28.255	-8.389	<0.001*	-.497	-21.556	-3.583	.006
5	-.288	-38.337	-12.497	<0.001*	-.177	-27.359	-3.981	.009
>5	-.542	-23.521	-3.692	.007	-.013	-9.296	8.644	.943

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

CHAPTER SIX

6. DISCUSSION

Relative to other similar studies carried out in Ethiopia, Sub-Saharan Africa, and internationally, some intriguing trends emerge. The average PF score in this study of 65.04 corroborates findings from other African countries, suggesting that AF patients have moderate physical functioning (76). However, global studies have reported higher PF scores, suggesting better physical functioning in AF patients in developed countries (77). This could be due to increased access to healthcare services, more advanced medical interventions, and combined rehabilitation facilities in the industrialized world. Socioeconomic factors like increased earnings, higher education levels, and improved healthcare infrastructure are also the probable reasons for the improved outcomes. Increased patient education and support groups in the developed countries also play a vital role in managing conditions like AF and overall physical health and HRQoL.

The RP domain score of 48.77 in the current study shows severe restrictions in activity due to physical health issues, which is supported by findings from studies done in Africa whereby AF patients are likely to have impaired physical roles (3). Similarly, the BP mean score of 50.06 indicates a moderate level of pain experienced by participants, consistent with reports from other African settings (78).

Ddiscrepancies between SF-36 domain scores presented in this research and international means may be attributed to various reasons. These may include variations in access to healthcare, socioeconomic levels, knowledge about health and illness within the culture, as well as comorbidities burden for AF patients in Ethiopia compared to developed countries. Other differences in study populations, sample sizes, and ways of conducting surveys might influence HRQoL scores between studies.

Comparison to other studies conducted in Ethiopia, Sub-Saharan Africa, and the world at large reveals similar trends. Older age and lower HRQOL is in agreement with the global trend whereby aging has been associated with poor physical and mental functioning (79). Similarly, the impact of valvular AF on lower HRQOL is consistent with studies showing that certain AF subtypes may have different prognostic implications (77). This is due to the fact that valvular AF is more severe and complicated, and tends to require more aggressive management, and is also

associated with more advanced complications such as heart failure and thromboembolism. Also, more severe symptoms and impaired function in patients with valvular AF can serve to further exacerbate poorer HRQoL.

The association of elevated CHA2DS2-VASc scores with worsening HRQOL concurs with other studies, validating the appropriateness of global risk assessment and management in patients with AF (3). Additionally, the relationship between taking more medications per day and reduced HRQOL underscores the potential burden of polypharmacy on patient well-being, a concern observed globally (77).

Inconsistencies reported in the impact of educational level on HRQoL, in which rising educational level did not consistently reflect higher HRQoL, may be influenced by Ethiopian cultural, socioeconomic, and access to healthcare considerations (80). These determinants have the capability to affect individuals' understanding of illness and health, along with their ability to utilize and access healthcare services in an efficient way. This highlights the significance of possessing a nuanced understanding of the local environment when translating HRQoL findings and points towards the necessity of considering holistic social determinants of health in order to promote improved quality of life for AF patients.

Identification of specific factors associated with lower HRQOL underscores the importance of individualized care plans for patient-specific needs in a comprehensive manner. Multidisciplinary approaches involving health care workers, pharmacists, and social support can assist in optimizing patient outcomes and maximizing overall quality of life among AF patients receiving long-term warfarin therapy.

CHAPTER SEVEN

7. STRENGTH AND LIMITATION OF THE STUDY

7.1. Strength

The study responds to a relevant public health concern through an examination of the Health-Related Quality of Life (HRQoL) of Atrial Fibrillation (AF) patients, a common cardiac condition, and the determinants that affect it. Understanding HRQoL is critical to optimize patient treatment and care. The study focuses specifically on long-term warfarin-treated AF patients, providing valuable information on the experiences and requirements of this patient group in particular. This targeted approach allows for more in-depth investigation into the determinants of HRQoL here. Conducting the study in Addis Ababa, Ethiopia, provides an indication of HRQoL within local context, with due regard to potential cultural, socioeconomic, and healthcare system determinants which may influence patient outcomes and experiences. This localized data adds to the generalizability and relevance of the study findings in the Ethiopian healthcare setting

7.2. Limitations

While the research is informative, it has some limitations:

Study design of cross-sectional study has restrictions to create causality between variables. Data collected at a point cannot allow temporal sequence between variables or causality. HRQoL and factors contributing are also typically assessed with self-report, which is susceptible to social desirability and recall bias. Patients may report symptoms or experiences in error, and this may affect the validity of data collected.

CHAPTER EIGHT

8. CONCLUSIONS AND RECOMMENDATIONS

8.1. Conclusions

The PCS and MCS scores in the current study provide a general idea about the physical and mental well-being of the participants. The mean PCS score of 48.08 reflects the moderate level of physical well-being among the participants, and the mean MCS score of 52.80 suggests relatively better mental well-being. There were significant correlations between reduced health-related quality of life, as reflected by the SF-36 Physical Component Score (PCS) and Mental Component Score (MCS), and older age, male gender, lower education, valvular atrial fibrillation, higher CHA2DS2-VASc score, and a daily regimen of more than two drugs in patients undergoing long-term warfarin therapy for atrial fibrillation. Specifically, for each 10-year disparity in age, PCS scores declined by 0.203 points ($p<0.001$) and MCS scores declined by 0.343 points ($p<0.001$). Moreover, scores on PCS were significantly lower in males compared to females with a mean difference of 0.199 points ($p<0.001$).

8.2. Recommendations

These findings emphasize the need for comprehensive care approaches to AF management and the resulting impact on HRQoL, with tailored interventions to correct modifiable risk factors and patient-relevant care plans.

For Government and Policy Makers:

Government and policymakers should ensure that the implementation of multidisciplinary care models for atrial fibrillation (AF) management becomes a priority in the healthcare system.

For Clinicians:

Clinicians need to adopt a patient-centered approach to AF care, where periodic assessment of determinants of HRQoL and consideration of patient preferences in treatment become a priority number one.

For stakeholders and researchers:

Stakeholders and researchers are also key players in advocating for AF care since they have the ability to carry out more studies on the impact of cultural, socioeconomic, and access to healthcare determinants on HRQoL inequities.

For Study Settings (Public Hospitals):

Public hospitals should embrace models of care that embrace inter-professional collaboration among healthcare professionals.

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ANNEXES

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

Participant information sheet and informed voluntary consent form for the study participant to assess "**HEALTH-RELATED QUALITY OF LIFE AND ITS ASSOCIATED FACTORS AMONG PATIENTS ON LONG-TERM WARFARIN THERAPY FOR ATRIAL FIBRILLATION AT SELECTED PUBLIC HOSPITALS, ADDIS ABABA ETHIOPIA, A CROSS-SECTIONAL STUDY**"

My name is _____ I am working as a data collector for the study being conducted by Zenebu Masresha who is an 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:**

HEALTH-RELATED QUALITY OF LIFE AND ITS ASSOCIATED FACTORS AMONG PATIENTS ON LONG-TERM WARFARIN THERAPY FOR ATRIAL FIBRILLATION AT SELECTED PUBLIC HOSPITALS, ADDIS ABABA ETHIOPIA, A CROSS-SECTIONAL STUDY

2. **Purpose of the study**:

This study aims to assess health-related quality of life and its associated factors among patients on long-term warfarin therapy for atrial fibrillation at selected public hospitals, Addis Ababa Ethiopia, a cross-sectional study.

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 Time in therapeutic range and health related quality of life of patients on long term warfarin for atrial fibrillation in selected public hospitals, Addis Ababa Ethiopia, 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

APPENDIX-B: የመረጃወረቀትእናበመረጃላይየተመሰረተስምምነት (የአማርኛቅጂ)

ለጥናቱተሳታፊየተሣታፊመረጃወረቀትእናበፈቃደኝነትላይየተመሰረተየፍቃድቅጽለጥናቱተሳታፊ

“በረጅምጊዜዋርፋሪንላይየታካሚዎችየህይወትጥራትጊዜእናበተመረጡየህዝብሆስፒታሎች፣አዲስአበባኢትዮጵያ፣ሰፊጥናት

የኔስም _____. በአዲስአበባዩኒቨርሲቲ፣ጤናሳይንስኮሌጅ፣

ነርሲንግእናአዋላጅትምህርትቤትየእምእስሲተማሪበሆነውበዘነቡማስረሻእየተካሄደላለውጥናትመረጃሰብሳቢሆኜእየሰራሁነው፣

በካዲዮቫስኩላርነርሲንግሁለተኛዲግሪዬንበከፊልለመጨረስ።

ስለጥናቱእናየጥናቱተካፋይሆኖመመረጡንለእርስዎለማስረዳትትኩረትዎንእንዲሰጡኝበአክብሮትእጠይቃለሁ።

1. የምርምርርዕስ፡-

በሕክምናክልልውስጥያለውጊዜእናከጤናጋርየተገናኘየታካሚዎችየህይወትጥራትበረጅምጊዜዋርፋሪንለተመረጡትየህዝብሆስፒ

ታሎች፣አዲስአበባኢትዮጵያ፣ክፍል-አቀፍጥናት

2. የጥናቱዓላማ፡-

ይህጥናትየታካሚዎችንየረጅምጊዜዋርፋሪንለኤትሪያልፋይብሪሌሽንበተመረጡየህዝብሆስፒታሎችውስጥበሕክምናውክልልእና

በጤናነክየህይወትጥራትላይያለውንጊዜለመገምገምያለመነው፣አዲስአበባኢትዮጵያ፣ክፍል-አቀፍጥናት

3. ተሳትፎ

ጥናቱንለመቀላቀልከተስማሙበመረጃሰብሳቢውየሚጠየቁትንጥያቄዎችበሙሉእንዲመልሱበአክብሮትይጠየቃሉ።

4. ምስጢራዊነት

ከእርስዎየተገኘመረጃበሚስጥርይያዛልእናምከዚህጥናትውጭለማንኛውምዓላማፈጽሞጥቅምላይአይውልም.

5. ስጋት

በዚህጥናትውስጥበሚሳተፍማንኛውምሰውላይምንምአይነትጉዳትአይደርስምተብሎይጠበቃል።

6. ጥቅም

በዚህጥናትውስጥያለዎትተሳትፎበረጅምጊዜዋርፋሪንላይየታካሚዎችንየህይወትጥራትእናየህይወትጥራትንለመረዳትበተመረጡ

የህዝብሆስፒታሎችአዲስአበባኢትዮጵያ፣ይህንንለማሻሻልየሚረዱመንገዶችንለመጠቆምያግዛል።

ከላይየተገለፀውንመረጃካነበቡእናከተረዱበኋላ; በዚህጥናትለመሳተፍከተስማሙ፣

በተዘጋጀውሳጥንውስጥምልክትበማድረግአዎየሚለውንይምረጡ።

አዎአይ

ከላይበተገለጸሎትመሰረትበጥናቱለመሳተፍፈቃደኛኖት?

አዎነኝካሉፊርማዎትንያኑሩ ----------

አይአይደለሁም

አመሰግናለሁ፡፡

የመረጃሰብሳቢዉስም ---------- ፊርማ ----------

የመረጃዉዉጤት፡ተጠቋልአልተጠናቀቀምበከፊልተጠናቋልአቋርጠዋል

APPENDIX-C: Sociodemographic and Clinical Characteristics of patients on long-term warfarin for atrial fibrillation in selected government hospitals, Addis Ababa Ethiopia

Instructions: Read each question carefully and tick (√) against the option that best suits your response

1. Sex

Male ☐

Female ☐

2. Age_____

3. Marital status

Married ☐

Widowed ☐

Diverged ☐

Single ☐

4. Educational status

Illiterate ☐

Able to read and write ☐

Primary school (from grade 1 -8) ☐

Secondary school (9 & 10) ☐

Preparatory (10 &11) ☐

Deploma ☐

Degree and more ☐

5. Types of AF

Valvular ☐

Non-valvular ☐

9. Co-morbid condition

Chronic rheumatic valvular heart disease ☐

Hypertension ☐

Stroke ☐

Degenerative valvular heart disease ☐

Pulmonary Hypertension ☐

Cardiomyopathy ☐

Hypertensive Heart Disease ☐

Hyperthyroidism ☐

Valve Replacement ☐

Diabetic Mellitus ☐

Ischemic Heart disease ☐

Asthma ☐

Others ☐

5, CHA2 DS2-VASc Score

1 ☐

2 ☐

>3 ☐

6, Number of Medications Prescribed per patient

1-2 ☐

3-4 ☐

>5

APPENDIX-D: SF-36 QUESTIONNAIRE

PleaseanswertheSF36questionsoftheHealthSurveycompletelyhonestlyandwithoutinterruptions.

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

1. ጾታ

ወንድ ☐

ሴት ☐

2. ዕድሜ_____

3. የጋብቻሁኔታ

ያገባ ☐

ባልየሞተባት ☐

ተለያይቷል። ☐

ነጠላ ☐

4. ሃይማኖት

ኦርቶዶክስ ☐

ፕሮቴስታንት ☐

ሙስሊም ☐

ካቶሊክ ☐

ሌሎች ☐

5. የትምህርትደረጃ

መሃይም ☐
ማንበብእናመጻፍየሚችል ☐
የመጀመሪያደረጃትምህርትቤት (ከ1-8ኛክፍል) ☐
ሁለተኛደረጃትምህርትቤት (9 እና 10) ☐
መሰናዶ (10 እና 11) ☐
ኮሌጅእናከዚያበላይ ☐

6. የኤትሪያልፋይብሪሌሽንዓይነቶች

ቫልቭላር ☐

ቫልቭያልሆነ ☐

3 አብሮየታመመሁኔታ

ሥርየሰደደየሩሲተስቫልቭየልብበሽታ ☐

የደምግፊት ☐

ስትሮክ ☐

የተዳከመቫልቭየልብበሽታ ☐

የሳንባየደምግፊት ☐

ካርዲዮሚዮፓቲ ☐

የደምግፊትየልብበሽታ ☐

ሃይፐርታይሮዲዝም ☐

የቫልቭምትክ ☐

የስኳርበሽታ ☐

የልብበሽታ

አስም ☐

ሌሎች ☐

4 (ቻ2 ዲ.ኤስ2- ቪ.ኤ.ኤስ)ነጥብ

1 ☐

2 ☐

>3 ☐ ☐

5 በአንድታካሚየታዘዙመድሃኒቶችብዛት

1-2 ☐

3-4 ☐

>5 ☐

ክፍልሶስት: SF 36 ጥያቄዎች
□ጠቅላላ□ጤንነት□

1. ጠቅለልአድርገው፤ሲመለከቱትየጤንነትዎሁኔታምንይመስላል?
ሀ. እጅግበጣምጥሩነዉለ. በጣምጥሩነዉሐ. ጥሩነዉመ. ለክፉአይሰጥምሠ. መጥፎነዉ

2. ከባለፈዉአመትጋርሲያስተያዩትየአሁኑየጤናሁኔታዎእንዴትይገለጻል?
ሀ. ከአምናእጅግበጣምይሻላልለ. በተወሰነመልኩከአምናይሻላል
ሐ. ከአምናጋርተመሳሳይነዉ/ለዉጥየለዉምመ. በተወሰነመልኩከአምናብሶብኛል
ሠ. ከአምናእጅግበጣምብሶብኛል
□

- የእንቅስቃሴ□ገደብ□

ከዚህበታችየተዘረዘሩትጥያቄዎችበየቀኑየሚያደርጓቸ
ዉናቸዉተብሎይገመታል።።
የአሁኑየጤናሁኔታዎእነዚህንእንዳያደርጓቸዉይከለ
ክልዎታል? መልሱአዎከሆነ፣
መጠኑንእንዴትይገልጹታል?

3. ከበድያሉእንቂስቃሴዎችለምሳሌመሮጥ፣
ከባድእቃዎችንማንሳትናከበድያሉእንቅስቃሴዎችላይ
መሳተፍያሉስፖርቶችንመስራትያቅቶታል?
ሀ. አዎበጣምአቅቶኛል
ለ. በመጠኑአቅቶኛል
ሐ. አይ፣ያቃተኝነገርየለም

4.
መጠነኛክብደትያላቸዉንእንቅስቃሴዎችማድረግለ
ምሳሌ፤ጠረጴዛ/ወንበር/የቤትቁሳቁስ/
ከቦታወደቦታማንቀሳቀስእናቀለልያሉስፖርቶችንማ
ከናወንያቅቶታልን?
ሀ. አዎበጣምአቅቶኛል
ለ. በመጠኑአቅቶኛል
ሐ. አይ፣ያቃተኝነገርየለም

5.
አነስያለክብደትያላቸዉንእቃማንሳት/መሸከምለምሳ
ሌ፤አስቤዛ፤
ቀለልያሉየቤትእቃዎችንከቦታወደቦታማንቀሳቀስያቅ
ቶታል?
ሀ. አዎበጣምአቅቶኛል
ለ. በመጠኑአቅቶኛል
ሐ. አይ፣ያቃተኝነገርየለም

6.
ብዙደረጃዎችንመዉጣትወይምዳገታማቦታዎችንመ
ሀ. አዎበጣምአቅቶኛል
ለ. በመጠኑአቅቶኛል
ሐ. አይ፣ያቃተኝነገርየለም

ዉጣትያቅቶታል?

7. አንድደረጃመዉጣትወይምጉብታመዉጣትያቅቶታል?

ሀ. አዎበጣምአቅቶኛል
ለ. በመጠኑአቅቶኛል
ሐ. አይ፣ያቃተኝነገርየለም

8. መታጠፍ፣መንበርከክ፣ማጎንበስያቅቶታል?

ሀ. አዎበጣምአቅቶኛል
ለ. በመጠኑአቅቶኛል
ሐ. አይ፣ያቃተኝነገርየለም

9. ከሁለትኪሎሜትርበላይበእግርመራመድያቅቶታል?

ሀ. አዎበጣምአቅቶኛል
ለ. በመጠኑአቅቶኛል
ሐ. አይ፣ያቃተኝነገርየለም

10. ብዙሰፈሮችንበእግሮማቋረጥያቅቶታል?

ሀ. አዎበጣምአቅቶኛል
ለ. በመጠኑአቅቶኛል
ሐ. አይ፣ያቃተኝነገርየለም

11. ከአንድሰፈርወደሌላአንድሰፈርበእግሮመሄድያቅቶታል

ሀ. አዎበጣምአቅቶኛል
ለ. በመጠኑአቅቶኛል
ሐ. አይ፣ያቃተኝነገርየለም

12. ራሶንችለዉገላዎንመታጠብወይምልብስመልበስያቅቶታል?

ሀ. አዎበጣምአቅቶኛል
ለ. በመጠኑአቅቶኛል
ሐ. አይ፣ያቃተኝነገርየለም

የአካላዊጤናችግሮች

ባለፉት 4 ሳምንታትዉስጥከዚህበታችከተዘረዘሩትችግሮችዉስጥ፤ አካላዊጤናምክንያትበሥራዎወይምየየእለትተግባሮትላይያጋጠሞትችግሮችአሉ?

ሀ. አዎለ. አይደለም

13. ለስራወይምለሌላእንቅስቃሴየሚጠቀሙትንሰዓትቀንሰዋል?

ሀ. አዎለ. አይደለም

14. መስራትከሚፈልጉትበታችነውያከናውኑት?

ሀ. አዎለ. አይደለም

15. አንዳንድሥራዎችንእንዳይሰሩገድቦታል?

ሀ. አዎለ. አይደለም

16.
ስራዎንመስራትከብዶታልወይምተጨማሪአቅምጠይቆታል?

- □የጤናማስሜትችግሮች

ባለፉት 4
ሳምንታትውስጥጥሩስሜትባለመሰማትማለትምበድብርትወይንምበብስጭትምክንያትበስራቦታአልያምበተለ
መደውየቀንተቀንእንቅስቃሴላይከነዚህውስጥያጋጠሞትችግሮችአሉ?
17. ለስራወይምለሌላእንቅስቃሴላይየሚያዉሉትንሰአትቀንሰዋል?
ሀ. አዎለ. አይደለም
18. መስራትከሚፈልጉትበታችነውያከናውኑት?
ሀ. አዎለ. አይደለም
19. ስራዎንእንደሌላግዜበጥንቃቄአልሰሩም?
ሀ. አዎለ. አይደለም

- □ማህበራዊግንኙነት

20. ባለፉት 4 ሳምንታትባጋጠምዎየስሜትመረበሽምክንያትከቤተሰቦ፣ከጓደኛዎ፣
ከጎረቤቶወይምከሌሎችጋርያሎትማህበራዊግንኙነትንምንያህልተጽዕኖአሳድሮበታል?
ሀ. ምንምተጽእኖአላሳደረብኝምለ. በትንሹሐ. በመጠኑ
መ. በከፍተኛደረጃሠ. በጣምበከፍተኛደረጃ

- □ህመም□

21. ባለፉት 4 ሳምንታትምንያህልየሰውነትህመምአጋጥሞታል?
ሀ. ምንምአላጋጠመኝምለ. በጣምትንሽ
ሐ. በትንሹመ. በመጠኑ
ሠ. በከፍተኛሁኔታሸ. በጣምበከፍተኛሁኔታ
22. ባለፉት 4 ሳምንታትዉስጥበሰዉነትዎዉስጥየሚሰማዎህመምሥራዎላይምንያህልተጽዕኖነበረዉ?
ሀ. ምንምተጽኖአልነበረዉምለ. በትንሹሐ. በመጠኑ
መ. በከፍተኛሁኔታሠ. በጣምበከፍተኛሁኔታ

- □አቅምና□ስሜት□

ከዚህበታችየተዘረዘሩትጥያቄዎችባለፉት 4
ሳምንታትእንዴትይሰማዎትእናነገሮችእንደትእንደነበሩየሚጠይቁናቸዉ::
እባክዎንከታችከተዘረዘሩትአማራጮችመካከልከአርሶሁኔታጋርየሚቀራረበዉንአንዱንይመልሱ
ባለፉት 4 ሳምንታትምንያህልጊዜ

23. ከመጠንያለፈ /
እጅግከፍያለየደስታስሜትተሰምቶታል?

ሀ. ሁልጊዜለ. በአብዛኛዉጊዜ
ሐ. በተወሰነጊዜመ. አንዳንድጊዜ

ሠ. በጣምትንሽጊዜሽ. በጭራሽ

24. ብስጩሆነያዉቃሉ? ሀ. ሁልጊዜለ. በአብዛኛዉጊዜ
ሐ. በተወሰነጊዜመ. አንዳንድጊዜ
ሠ. በጣምትንሽጊዜሽ. በጭራሽ

25. ሀ. ሁልጊዜለ. በአብዛኛዉጊዜ
ምንምነገርአያስደስተኝምብለዉየሀዘንስሜትተሰም ሐ. በተወሰነጊዜመ. አንዳንድጊዜ
ቶትያዉቃል? ሠ. በጣምትንሽጊዜሽ. በጭራሽ

26. የተረጋጋናሰላማዊስሜትተሰምቶትያዉቃል? ሀ. ሁልጊዜለ. በአብዛኛዉጊዜ
ሐ. በተወሰነጊዜመ. አንዳንድጊዜ
ሠ. በጣምትንሽጊዜሽ. በጭራሽ

27. ብዙአቅም (ጉልበት) አሎት? ሀ. ሁልጊዜለ. በአብዛኛዉጊዜ
ሐ. በተወሰነጊዜመ. አንዳንድጊዜ
ሠ. በጣምትንሽጊዜሽ. በጭራሽ

28. ሀዘንናጭንቀት/ ሀ. ሁልጊዜለ. በአብዛኛዉጊዜ
የበታችነትስሜትተሰምቶትያዉቃል? ሐ. በተወሰነጊዜመ. አንዳንድጊዜ
ሠ. በጣምትንሽጊዜሽ. በጭራሽ

29. የመታከትስሜትተሰምቶትያዉቃል? ሀ. ሁልጊዜለ. በአብዛኛዉጊዜ
ሐ. በተወሰነጊዜመ. አንዳንድጊዜ
ሠ. በጣምትንሽጊዜሽ. በጭራሽ

30. ደስተኛሰዉነበሩ? ሀ. ሁልጊዜለ. በአብዛኛዉጊዜ
ሐ. በተወሰነጊዜመ. አንዳንድጊዜ
ሠ. በጣምትንሽጊዜሽ. በጭራሽ

31. ድካምተሰምቶትያዉቃል? ሀ. ሁልጊዜለ. በአብዛኛዉጊዜ
ሐ. በተወሰነጊዜመ. አንዳንድጊዜ
ሠ. በጣምትንሽጊዜሽ. በጭራሽ

- □ማህበራዊግንኙነት

32.. ባለፉት 4 ሳምንታትዉስጥምንያህልጊዜየአካላዊጤናችግርወይምየስነ-ልቦናመረበሽበማህበራዊግንኙነትዎላይለምሳሌከቤተሰብ፣ከጓደኞች፣ ከጎረቤቶትእንድሁምከሌሎችጋርያሎትግኙነትላይተጽእኖአድርጎበታል?
ሀ□ሁልጊዜ□ለ□አብዛኛዉን□ጊዜ□ሐ□አንዳንድ□ጊዜ□
መ□በትንሹ□ሠ□በጭራሽ

- □አጠቃላይ□ጤና□

ከዚህበታችየተዘረዘሩትጥያቄዎችለእርሶምንያህልእውነትወይንምሃሰትናቸዉ::

33. ከሌላሰውይልቅበቀላሉለበሽታተጋላጭነኝ ሀ. በትክክልእውነትለ. በአብዛኛውእውነት
ሐ. አላውቅምመ. በአብዛኛውሃሰት

ሠ. በትክክልሃሰት

34. እንደማንኛዉምሰዉጤነኛነኝ

ሀ. በትክክልእውነትለ. በአብዛኛውእውነት

ሐ. አላውቅምመ. በአብዛኛውሃሰት
ሠ. በትክክልሃሰት

35.
የጤናዬሁኔታእየተባባሰእንደሚሄድእጠብቃለሁ

ሀ. በትክክልእውነትለ. በአብዛኛውእውነት
ሐ. አላውቅምመ. በአብዛኛውሃሰት
ሠ. በትክክልሃሰት

36. ጤናዬእጅግበጣምጥሩነዉ

ሀ. በትክክልእውነትለ. በአብዛኛውእውነት
ሐ. አላውቅምመ. በአብዛኛውሃሰት
ሠ. በትክክልሃሰት

የመረጃሰብሳቢዉስምናፊርማ