MINISTRY OF EDUCATION AND MINISTRY OF TRAINING HEALTH NATIONAL INSTITUTE OF MALARIOLOGY, PARASITOLOGY AND ENTOMOLOGY

### NGUYEN THI THAO SUONG

### STRUCTURE OF CARDIOVASCULAR DISEASES AND QUALITY OF LIFE IN OLDER ADULTS WITH ATRIAL FIBRILLATION AND HEART FAILURE TREATED AT THONG NHAT HOSPITAL, HO CHI MINH CITY

Major: Epidemiology Code: 972 01 17

### THESIS SUMMARY

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Cardiovascular diseases (CVDs) are currently the leading cause of death worldwide, accounting for approximately 17.9 million deaths each year, with over 75% occurring in low- and middle-income countries [1]. In Vietnam, around 170,000 deaths were attributed to CVDs in 2016, representing 31% of all deaths [2]. The burden of CVDs is steadily increasing along with socioeconomic development and the rapid pace of population aging. In the United States, 82% of deaths from CVDs occur in older adults; in Vietnam, the proportion of older adults increased from 10% in 2011 to 11.9% in 2019, accompanied by an age-related rise in cardiovascular mortality [3], [4], [5]. According to the World Health Organization (WHO), most CVDs are preventable by controlling risk factors such as hypertension, smoking, diabetes, obesity, and a sedentary lifestyle [2], [7].

CVDs not only affect physical health but also have significant impacts on mental health and social life, leading to reduced quality of life (QoL) [9]. According to the WHO, QoL is a multidimensional concept that reflects physical health, psychological well-being, level of independence, social relationships, and living environment [10]. Many studies have shown that QoL is a sensitive indicator for evaluating the effectiveness of interventions and an independent predictor of survival in patients with CVDs. In Vietnam, studies such as that by Nguyen Hoang Dinh (2016) showed that patients with hypertension had low health scores in all domains of the SF-36 scale [13].

However, there remains a lack of research on the structure of CVDs and QoL among older adults in Vietnam. Therefore, the study entitled "Structure of Cardiovascular Diseases and Quality of Life in Older Adults with Atrial Fibrillation and Heart Failure Treated at Thong Nhat Hospital, Ho Chi Minh City" was conducted with the following objectives:

- 1. To describe the structure of cardiovascular diseases and related factors in older adults treated at Thong Nhat Hospital, Ho Chi Minh City, in 2022.
- 2. To assess the quality of life of older adults with heart failure and atrial fibrillation receiving inpatient treatment at Thong Nhat Hospital, Ho Chi Minh City, in 2023.

#### STRUCTURE OF THE DISSERTATION

The dissertation comprises 121 pages, including:

- Introduction: 2 pages
- Literature Review: 28 pages
- Subjects and Research Methods: 23 pages
- Research Results: 29 pages
- Discussion: 35 pages

#### SCIENTIFIC AND NOVEL CONTRIBUTIONS

The dissertation presents new findings on the structure of cardiovascular diseases and the quality of life of older adults with CVDs at a major hospital in Ho Chi Minh City. The parallel use of two different QoL assessment tools tailored to specific conditions (heart failure and atrial fibrillation) yielded consistent results, highlighting that both are serious chronic diseases significantly affecting patients' quality of life. In the study group, patients had low physical health scores but high mental health scores, reflecting effective care and high-quality services at the hospital, which helped patients maintain optimism and trust in their treatment.

#### Chapter 1

#### LITERATURE REVIEW

#### 1.1. Older Adults and Diseases in the Elderly

Older adults (OAs) are defined by the Vietnamese Law on the Elderly (2009) as individuals aged 60 years and above [14]. Globally, population aging is occurring rapidly, particularly in developing countries. In 2012, there were approximately 810 million people aged 60 and over (11.5% of the global population), a figure projected to rise to 22% by 2050. This demographic shift presents numerous challenges in terms of socioeconomic development and healthcare provision [15]. In Vietnam, the proportion of older adults reached 11.9% in 2019 [16]. Although many older adults live relatively stable lives, a significant number live alone, work to earn a living, and face various health risks. Disparities in education, self-care capacity, and access to healthcare services exist between urban and rural areas, between genders, and among different ethnic groups. Physically, aging affects nearly all organ systems. Older adults often experience a decline in cardiovascular, respiratory, neurological, sensory, and digestive functions. Common conditions include insomnia, memory loss, muscle weakness, and chronic diseases such as hypertension, diabetes, and osteoporosis [18].

#### **Disease Structure in Older Adults**

Globally, the prevalence of chronic diseases in older adults is remarkably high. A study in China reported that 31.7% of older adults had at least one of four conditions: hypertension (26%), diabetes (8%), chronic obstructive pulmonary disease (COPD) (1%), and stroke (1.9%). Another study found that 85.2% of older adults suffered from chronic diseases, with hypertension (67.6%), dyslipidemia (58.8%), diabetes (21.5%), and osteoporosis (24.5%) being the most common [19].

In Vietnam, a study in Quang Tri Province revealed that 100% of older adults had disease symptoms, with an average of nearly four diseases per person. Common disease groups included circulatory (17.6%), respiratory (14.9%), musculoskeletal (13.7%), digestive (12.5%), and endocrine (7%) systems. Among these, hypertension was the most prevalent, affecting 45.3% of the population [21]. At Thong Nhat Hospital, a 2009 study showed that cardiovascular diseases were predominant, with hypertension being the leading cause of hospital admission (13.8%). Other common diseases included ischemic heart disease, diabetes, digestive disorders, and cerebrovascular diseases [22]. These statistics highlight the significant disease burden in the elderly and underscore the importance of long-term healthcare, chronic disease management—especially for cardiovascular diseases and hypertension—in the context of a rapidly aging population.

#### **1.2.** Cardiovascular Diseases

#### **1.2.1. Definition of Cardiovascular Disease**

Cardiovascular diseases (CVDs) refer to a group of disorders involving the heart and blood vessels, classified under codes I00 to I99 in the ICD-10 [23], [24]. CVDs encompass a wide range of conditions, including rheumatic heart disease,

hypertensive heart disease, ischemic heart disease, cerebrovascular disease, peripheral vascular disease, venous disorders, heart failure, atrial fibrillation, and aneurysms. These diseases can be broadly divided into two main categories: atherosclerotic diseases (e.g., coronary artery disease, cerebrovascular disease) and non-atherosclerotic diseases (e.g., congenital heart disease, myocarditis).

#### Hypertension (HTN):

Hypertension is defined as having a systolic blood pressure  $\geq$ 140 mmHg and/or a diastolic blood pressure  $\geq$ 90 mmHg. Common subtypes include isolated systolic hypertension, isolated diastolic hypertension, white-coat hypertension, and masked hypertension [25], [26].

#### Stroke:

There are two main types of stroke: ischemic stroke (caused by vascular occlusion) and hemorrhagic stroke (caused by vessel rupture). Ischemic stroke is more common and requires emergency treatment to reduce mortality and long-term disability [27].

#### **Coronary Artery Disease (CAD):**

This condition results from atherosclerotic narrowing of the coronary arteries, reducing blood flow to the heart muscle. It includes two major syndromes: acute coronary syndrome (myocardial infarction, unstable angina) and chronic coronary syndrome [29].

#### Heart Failure (HF):

Heart failure is a condition in which the heart is unable to pump sufficient blood to meet the body's needs. It can be classified based on ejection fraction, the anatomical site of impairment, physiological function, and severity according to the New York Heart Association (NYHA) functional classification (Classes I–IV) [30], [31].

#### Peripheral Vascular Disease (PVD):

This includes arterial diseases (due to atherosclerosis, thrombosis, etc.) and venous disorders (such as varicose veins or chronic venous insufficiency). PVD reflects systemic atherosclerosis and increases the risk of other cardiovascular events [32].

#### **Atrial Fibrillation (AF):**

AF is a type of supraventricular tachyarrhythmia caused by uncoordinated atrial contraction. It is a major risk factor for stroke due to thrombus formation in the atria. AF is classified into four types: paroxysmal, persistent, long-standing persistent, and permanent [33].

#### Aneurysms:

An aneurysm is a localized dilation of an artery, which may be congenital or acquired. It most commonly affects the aorta and cerebral arteries and carries a high risk of rupture, posing a serious threat to life

#### 1.2.2. Risk Factors for Cardiovascular Disease

#### 1.2.2.1. Non-Modifiable Risk Factors

#### Age:

The risk of cardiovascular disease (CVD) increases with age. In older adults, vascular structural changes, left ventricular hypertrophy, elevated systolic blood pressure, and general health decline all contribute to higher CVD risk. Moreover, risk prediction models need adjustment for this population due to the phenomenon of "reverse

#### Sex:

Women have unique CVD risk factors such as preeclampsia, menopause, and autoimmune diseases. Estrogen deficiency after menopause contributes to atherosclerosis. Sex-specific analyses are necessary to optimize prevention and treatment strategies [36].

#### Family History & Genetics:

There is a strong genetic component in CVD. Single nucleotide polymorphisms (SNPs), such as those at locus 9p21, are associated with increased CVD risk. Ethnic differences also affect disease prevalence and associated risk factors like obesity and hypertension [37], [38].

#### 1.2.2.2. Modifiable Risk Factors

#### **Blood Glucose & Diabetes Mellitus:**

Insulin resistance and disorders in glucose metabolism significantly increase CVD risk, especially in individuals with type 2 diabetes and coexisting obesity [39].

#### Dyslipidemia:

Elevated cholesterol, triglycerides, and LDL-C are classic risk factors. Diets high in saturated fats and sugar play a major role in lipid disorders [40], [41].

#### Smoking:

A leading preventable cause of CVD, smoking damages blood vessels, promotes thrombosis, raises triglycerides, lowers HDL-C, and increases the risk of myocardial infarction and stroke [42], [43].

#### **Obesity & Physical Inactivity:**

Obesity contributes to cardiac chamber dilation, adipose tissue dysfunction, and atherosclerosis. Physical activity aids in weight loss and improves glucose and lipid metabolism [44], [45].

#### **Dietary Habits:**

High salt intake, consumption of animal fats and sugars, and excessive alcohol intake elevate the risk of hypertension, atherosclerosis, and myocardial infarction. Older adults should follow a balanced, age-appropriate diet [45], [46].

#### Mental Health:

Depression, anxiety, and chronic stress are linked to CVD through neurohormonal mechanisms and unhealthy behaviors such as inactivity and poor treatment adherence [47], [48].

#### 1.2.3. Cardiovascular Disease in the Elderly

#### **Global Context:**

Cardiovascular disease (CVD) is the leading cause of death globally, accounting for approximately 17.9 million deaths each year—31% of all global deaths (as of 2016) [49]. Although age-standardized mortality rates have declined thanks to medical advancements and better risk factor control, the absolute number of cases continues to rise due to population aging. CVD is highly prevalent among older adults, with ischemic heart disease (IHD) and atrial fibrillation (AF) being the two main contributors to disease burden. Prevalence and mortality increase steadily with age, regardless of sex or ethnicity. In the United States, 82% of CVD-related deaths occur

in individuals aged  $\geq 65$ . Coronary artery disease (CAD) alone accounts for about half of all CVD deaths, with 82% of those deaths occurring in people aged  $\geq 65$  [50], [51]. The incidence of hypertension and myocardial infarction also rises significantly in the elderly. Heart failure prevalence in people aged  $\geq 80$  reaches 12–14%. This burden not only affects individual health but also places a significant strain on healthcare and social systems [55], [56].

#### In Vietnam:

Vietnam is facing a rapid increase in CVD cases due to population aging and lifestyle changes. In 2016, CVD accounted for 31% of all deaths in the country, or over 170,000 deaths [52]. In major hospitals, CVD is the most common group of illnesses in older adults, with hypertension (29.8–61.4%), chronic ischemic heart disease (9.4–25.6%), and stroke being the most prevalent. One study showed that each older adult typically suffers from an average of two different conditions, uses more medications, and has longer hospital stays than younger patients. The prevalence of hypertension in the elderly ranges from 35–60%, making it the leading cause of complications such as heart failure, myocardial infarction, and stroke. The stroke rate among people aged  $\geq$ 70 is also notably high (2.79%). These data underscore age as a non-modifiable risk factor closely linked to most forms of cardiovascular disease [60], [61], [62].

#### 1.2. Quality of Life in Older Adults with Cardiovascular Disease

Quality of life (QoL) reflects an individual's overall satisfaction with life, encompassing physical and psychological health, social relationships, and environmental context [63]. It is a subjective concept influenced by disease, emotions, environment, social support, and personal values. The World Health Organization defines QoL as a broad concept affected by physical health, psychological state, level of independence, and environment [10].

Cardiovascular diseases (CVDs) significantly reduce QoL in older adults due to both physical symptoms (dyspnea, fatigue, chest pain) and psychological effects (anxiety, depression). These conditions limit daily activities and increase hospital admissions and mortality. Studies in Vietnam and globally have shown that QoL is generally low among patients with heart failure and atrial fibrillation, especially in those with complications, comorbidities, or adverse effects of treatment [65], [66].

In patients with heart failure and atrial fibrillation, QoL is affected by the number and severity of symptoms. Research shows that over 85% of heart failure patients experience breathlessness and fatigue, and more than 70% report feelings of anxiety and sadness. Patients with advanced heart failure (NYHA Class III/IV), women, those with depression, and individuals lacking social support tend to have worse QoL [66], [67], [68].

#### QoL Assessment Scales [69], [70]:

• General QoL Scales:

SF-36, SF-12, EQ-5D, and WHOQOL-BREF are widely used tools that assess general QoL and are easy to administer.

#### • Disease-specific QoL Scales:

• **For Heart Failure:** KCCQ (Kansas City Cardiomyopathy Questionnaire), MLHFQ (Minnesota Living with Heart Failure Questionnaire), MQOL.

• **For Atrial Fibrillation:** AFEQT (Atrial Fibrillation Effect on Quality-of-Life), AF-QoL.

**SF-36** contains 36 questions covering 8 domains such as physical function, mental health, pain, and social functioning. Higher scores indicate better QoL [71].

**KCCQ** assesses heart failure impact across 7 domains, scoring from 0–100, with lower scores indicating more severe symptoms and worse prognosis. Its shortened version, KCCQ-12, maintains high reliability [72]–[77].

**AFEQT** includes 42 items (39 scored) to evaluate how atrial fibrillation affects symptoms, physical-social functioning, emotional well-being, and treatment satisfaction. Higher scores reflect fewer symptoms and better QoL [78], [79], [81].

The appropriate use of QoL scales allows for a comprehensive understanding of disease impact and helps improve strategies for managing cardiovascular disease in older adults

#### CHAPTER 2

#### STUDY SUBJECTS AND METHODS

**2.1.** Objective 1: To describe the structure of cardiovascular diseases and some related factors among elderly inpatients at Thong Nhat Hospital, Ho Chi Minh City, in 2022.

**Study subjects:** All medical records of patients aged  $\geq 60$  years who were hospitalized at Thong Nhat Hospital, Ho Chi Minh City in 2022.

**Inclusion criteria:** patients aged 60 and above, with diagnoses coded according to ICD-10.

**Exclusion criteria:** records with incomplete variables or repeated hospitalizations for the same condition.

#### Study site and period:

The study was conducted at Thong Nhat Hospital – a leading geriatric referral center in southern Vietnam – from January 1, 2022, to December 31, 2022.

#### Study design:

Descriptive, retrospective study.

#### Sample size and sampling method:

Total population sampling. A total of **15,165** eligible medical records were collected. **Data collection tools and variables:** 

A data collection tool was developed and pilot-tested. The main variables included:

- **Cardiovascular diseases:** heart failure, hypertension, atrial fibrillation, coronary artery disease (CAD), etc.
- **Demographic characteristics:** age, gender, geographic location.
- Risk factors: smoking, alcohol consumption, BMI, dyslipidemia, etc.
- Hospitalization details: length of stay, treatment outcomes.

#### • Biochemical parameters: cholesterol, triglycerides, LDL-c, HDL-c, etc.

#### **Implementation steps:**

Tool development  $\rightarrow$  Site survey  $\rightarrow$  Record selection  $\rightarrow$  Data collection and entry  $\rightarrow$  Data analysis  $\rightarrow$  Evaluation and conclusion.

#### Main content and research indicators:

• Demographic characteristics of the subjects.

- Structure of cardiovascular diseases based on ICD-10, distribution by age, gender, and location.
- Length of hospital stay and treatment outcomes.
- Prevalence of each type of cardiovascular disease.
- Analysis of the relationship between cardiovascular diseases and factors such as age, gender, smoking, alcohol use, BMI, dyslipidemia, and diabetes.

# **2.2.** Objective 2: To assess the quality of life (QoL) among elderly inpatients with heart failure and atrial fibrillation at Thong Nhat Hospital, Ho Chi Minh City, in 2023.

Based on the distribution of cardiovascular diseases among elderly patients at Thong Nhat Hospital in 2022, the three most common conditions were hypertension (72.44%), arrhythmias (40.58%), and heart failure (19.4%). Atrial fibrillation accounted for the highest proportion within the arrhythmia group (40.98%). Both atrial fibrillation and heart failure are prevalent among the elderly and significantly impact health and quality of life (QoL). Therefore, this study focuses on these two disease groups to assess QoL, aiming to guide appropriate treatment and care strategies.

Study subjects and methods:

This descriptive, prospective study was conducted at the Cardiovascular Center of Thong Nhat Hospital from January 1, 2023, to December 31, 2023. **Participants:** Inpatients aged  $\geq 60$  years diagnosed with chronic atrial fibrillation or chronic heart failure, mentally alert, and who provided informed consent. **Sample size:** A total of 600 patients were surveyed (300 with atrial fibrillation and 300 with heart failure).

#### Assessment tools and methods:

Quality of life was assessed using the **SF-36** questionnaire (applied to both groups), **AFEQT** (for atrial fibrillation), and **KCCQ** (for heart failure). Scores were standardized from 0 to 100 and categorized into four levels:

- Poor (≤40)
- Fair-poor (41–60)
- Fair-good (61–80)
- Good-excellent (>80)

**Data analysis:** Conducted using SPSS version 22.0. Statistical tests used included Chi-square, Mann-Whitney U, and Kruskal-Wallis H, with a significance level of p < 0.05.

#### Study objectives:

- To describe the QoL characteristics of elderly patients with atrial fibrillation and heart failure.
- To analyze the association between QoL and demographic, clinical, and paraclinical characteristics.
- To compare the results between different QoL measurement tools in terms of relevance and correlation.

#### Ethical considerations and error control:

The study was approved by the Ethics Committee of Thong Nhat Hospital.

Investigators were thoroughly trained. All questionnaires were translated, culturally adapted, and pilot-tested prior to official use to ensure data reliability and validity.

#### Chapter 3 RESEARCH RESULTS

### **3.1.** Cardiovascular Disease Structure and Related Factors in Hospitalized Elderly Patients at Thong Nhat Hospital, Ho Chi Minh City, in 2022:

During the research period, we collected data from 15,165 patients who met the study criteria, of which 10,546 patients were diagnosed with cardiovascular diseases and included in the analysis with the following characteristics:

#### 3.1.1. Characteristics of the Study Sample

Table 3.1. Demographic Characteristics of the Study Participants (n=15,165)

(	Characteristic	Number	Percentage (%)					
	60-69	5210	34,36					
	70-79	5124	33,79					
Age group	$\geq 80$	4831	31,86					
	$\overline{X}\pm SD$	74,72	$2 \pm 9,14$					
Condor	Male	8145	53,71					
Gender	Female	7020	46,29					
Geographical	Ho Chi Minh city	12099	79,78					
location	Other provinces	3066	20,22					
Hospital	Emergency	2951	19,46					
admission circumstance	Regular admission	12214	80,54					

The average age of the study population was  $74.72 \pm 9.14$  years. Among them, the majority were elderly patients aged 60–69 years, accounting for 34.36%, followed by those aged 70–79 years at 33.79%, and the lowest proportion was in patients over 80 years old, making up 31.86%. The male-to-female ratio was approximately equal, at 1.16:1. The rate of emergency admissions accounted for 19.46%.

Table 3.2. Distribution of Hospitalized Patients by Disease Group According to ICD-10 (n=15,165)

No	Disease group (ICD - 10)	Number	Percentage
140	Disease group (ICD - IO)		(%)
1	Group I - Certain infectious and parasitic diseases	7972	52,57
2	Group II – Neoplasms	3604	23,77
	Group III – Diseases of the blood, blood-forming	874	5,76
3	organs, and certain disorders involving the immune		
	mechanism		
1	Group IV – Endocrine, nutritional and metabolic	7710	50,84
4	diseases		
5	Group V – Mental and behavioral disorders	720	4,75
6	Group VI – Diseases of the nervous system	1873	12,35

7	Group VII – Diseases of the eye and adnexa	213	1,40
0	Group VIII – Diseases of the ear and mastoid	654	4,31
8	process		
9	Group IX – Diseases of the circulatory system	10546	69,54
10	Group X – Diseases of the respiratory system	3148	20,76
11	Group XI – Diseases of the digestive system	7002	46,17
10	Group XII – Diseases of the skin and subcutaneous	430	2,84
12	tissue		
12	Group XIII – Diseases of the musculoskeletal	2951	19,46
15	system and connective tissue		
14	Group XIV – Diseases of the genitourinary system	3455	22,78
15	Group XV – Pregnancy, childbirth and the	210	1,38
15	puerperium		
16	Group XVI – Certain conditions originating in the	0	0
10	perinatal period		
17	Group XVII – Congenital malformations,	93	0,61
17	deformations and chromosomal abnormalities		
	Group XVIII – Symptoms, signs and abnormal	3032	19,99
18	clinical and laboratory findings, not elsewhere		
	classified		
19	Group XIX – Injury, poisoning and certain other	773	5,1
17	consequences of external causes		
20	Group XX – External causes of morbidity and	31	0,2
20	mortality		
21	Group XXI – Factors influencing health status and	247	1,63
<u>~1</u>	contact with health services		
22	Group XXII – Codes for special purposes	2047	13,50

The disease groups with the highest proportions included: diseases of the circulatory system (69.54%), infectious and parasitic diseases (52.57%), endocrine, nutritional, and metabolic diseases (50.84%), and diseases of the digestive system (46.17%).

3.1.2. Hospitalization Status of the Elderly by Cardiovascular Disease Groups Table 3.3. Distribution of Cardiovascular Disease-Related Hospitalizations by Demographic Characteristics (n=10,546)

(	Characteristic	Number	Percentage (%)
Age group	60-69	3560	33,76
	70-79	3610	34,23
	$\geq 80$	3376	32,01
	Male	5580	52,91
Gender	Female	4966	47,09
	Ho Chi Minh city	8399	89,64
Geographical location	Other provinces	2147	20,36

Emergency	2298	21,79
Regular admission	8248	78,21

10

Elderly patients with cardiovascular diseases at Thong Nhat Hospital were evenly distributed across all three age groups: 60-69, 70-79, and  $\ge 80$  years. The male-to-female ratio was 1.12:1, and the majority of patients came from Ho Chi Minh City (89.64%).



### Figure 3.1. Hospitalization Rates for Common Cardiovascular Diseases in the Elderly (n=10,546)

The most common cardiovascular disease groups were hypertension (72.44%), arrhythmias (40.58%), heart failure syndrome (19.47%), and cerebrovascular disease (11.58%). Other groups, including infectious endocarditis, cardiomyopathy, pericardial disease, arterial disease, venous disease, pulmonary heart disease and pulmonary circulation disorders, cerebrovascular disease, and other heart diseases, accounted for a lower proportion (under 5%).



Figure 3.2. Treatment Outcomes of Cardiovascular Diseases in the Elderly (n=10,546)

The highest proportion was patients who recovered and were discharged, accounting for 93.6%. The proportions of patients in critical condition whose families requested discharge or who required immediate transfer to another facility were 2.9% and 0.7%, respectively. Additionally, 0.8% of critically ill patients died. The rate of patients leaving the hospital against medical advice was 0.1%.

 Table 3.32. Multivariable Regression Analysis of Factors Associated with

 Cardiovascular Disease in the Elderly

Indicators	OR (95%CI)	р					
$Age \ge 70$	1,08 (1-1,17)	0,049					
Overweight/Obesity	2,87 (2,63-3,14)	0,0072					
Alcohol consumption	1,13 (1,04-1,23)	0,0019					
Smoking	1,62 (1,5-1,76)	0,0057					
Dyslipidemia	1,25 (1,14-1,37)	0,0081					
Diabetes mellitus	1,59 (1,35-1,87)	0,0034					

In the multivariable regression analysis, the following factors were found to be associated with an increased risk of cardiovascular disease in the elderly:  $age \ge 70$ , overweight/obesity, alcohol consumption, smoking, dyslipidemia, and diabetes mellitus.

3.2. Assessment of Quality of Life in Elderly Patients with Heart Failure and Atrial Fibrillation Hospitalized at Thong Nhat Hospital, Ho Chi Minh City, in 2023

3.2.1. Quality of Life in Elderly Patients with Heart Failure

 

 Table 3.34. Mean Quality of Life Scores (SF-36) in Elderly Patients with Heart Failure

Domain	<b>X</b> ± <b>SD</b>	Min	Max							
Physical health	$23,51 \pm 19,61$	0,0	74,05							
Mental health	$57,84 \pm 10,84$	29,29	78,57							
Overall health	$36,90 \pm 14,60$	17,36	75,28							

The average physical health score of patients with chronic heart failure was  $23.51 \pm 19.61$  points, ranging from 0 to 74.05 points. For mental health, the average score was  $57.84 \pm 10.84$  points, ranging from 29.29 to 78.57 points. The overall health score, calculated based on both physical and mental health, averaged  $36.90 \pm 14.60$  points.



Figure 3.3. Classification of Quality of Life Scores Based on the SF-36 Scale in Elderly Patients with Heart Failure

Regarding physical health scores, most patients in the study group fell into the poor category (62%) and poor-to-fair category (27.33%). For mental health scores, the proportions of patients classified as poor-to-fair, fair-to-good, and good-to-excellent were 22.67%, 67.67%, and 9.67%, respectively. As for overall health scores, 55.33% of patients were classified as poor-to-fair, 22% as fair-to-good, and only 1.67% as good-to-excellent. The proportion of patients in the poor category for overall health was 21%.

Table	3.35.	Association	Between	Mean	Quality	of	Life	Scores	(SF-36)	and
Demog	graphi	c Characteris	stics in Ele	derly Pa	atients wi	ith l	Heart	Failure	(n=300)	

Variable		Physical health		Mental health		Overall health	
		<u>X</u> ±SD	р	<b>X</b> ± <b>SD</b>	р	<u>X</u> ±SD	р
	Male (162)	22,37	0,274	57,28	0,335	36,00	0,248
		±		±		±	
Condor		18,62		10,51		14,07	
Gender	Female (138)	24,86		58,50		37,95	
		±		<u>+</u>		±	
		20,70		11,22		15,19	
Age	60-69 (86)	21,08	0,358	57,93	0,996	35,44	0,514
		±		± 9,98		土	

			13				
		18,45				13,92	
	70-79 (92)	23,80		57,80		37,07	
		±		±		±	
		19,89		11,87		14,99	
	$\geq 80$	25,02		57,81		37,80	
	(122)	±		±		±	
		20,19		10,70		14,81	
Marital	Currently	30,80	0,0049	59,02	0,009	41,82	0,0065
status	married (198)	±		±		±	
		19,63		11,92		15,06	
	Single/Wido	$9,37 \pm$		55,56		27,35	
	wed (102)	9,01		± 7,93		± 7,02	
Educational	High school	29,08	0,001	58,54	0,443	40,64	0,002
level	education or	±		±		±	
	above (197)	18,63		10,48		14,30	
	Below high	20,85		57,51		35,11	
	school education	±		±		±	
	(203)	19,56		11,02		14,44	

The average overall health score (quality of life) of elderly patients with heart failure who were currently living with a spouse ( $41.82 \pm 15.06$ ) and had an education level of high school or above ( $40.64 \pm 14.30$ ) was higher than that of those who were single or widowed ( $27.35 \pm 7.02$ ) and had an education level of high school or below ( $35.11 \pm 14.44$ ). This difference was statistically significant (p < 0.05).

 Table 3.36. Association Between Mean Quality of Life Scores (SF-36) and

 Clinical Characteristics in Elderly Patients with Heart Failure (n=300)

		Number	Phy	sical	Mental health		<b>Overall health</b>		
Variable	e		hea	alth					
			<u>X</u> ±SD	р	<b>X</b> ±SD	р	<u>X</u> ±SD	р	
	Ι	92	22,93	0,605	57,19	0,303	36,30	0,274	
			$\pm$		<u>+</u>		$\pm$		
			19,51		8,88		14,01		
	II	49	22,81		54,93		35,20		
			$\pm$		<u>+</u>		$\pm$		
NYHA			20,24		11,25		14,89		
classification	III	128	22,84		58,47		36,75		
			$\pm$		<u>+</u>		$\pm$		
			19,77		11,36		14,84		
	IV	31	29,11		61,80		41,95		
			$\pm$		<u>+</u>		$\pm$		
			18,25		12,26		14,51		
Duration of	< 1	159	28,50	0,0012	60,05	0,0018	40,78	0,0013	
illness			±		<u>+</u>		±		

(years)			21,82		12,14		16,34	
	1 - <	47	18,56		57,50		33,87	
	5		±		±		<u>±</u>	
			15,63		6,95		10,44	
	≥ 5	94	17,56		54,27		31,85	
			±		$\pm$		±	
			14,72		9,08		11,05	
Atrial	Yes	108	30,06	0,0011	59,03	0,155	41,32	0,0069
fibrillation			<u>+</u>		±		±	
			20,61		9,53		15,56	
	No	92	19,83		57,17		34,41	
			±		±		±	
			18,07		11,49		13,45	

Elderly patients with a longer duration of heart failure had lower scores in physical health, mental health, and overall health. The differences were statistically significant. Specifically, those with a disease duration of less than 1 year had higher overall health scores compared to those with a duration of 1 to less than 5 years and 5 years or more, with mean scores of  $40.78 \pm 16.34$ ,  $33.87 \pm 10.44$ , and  $31.85 \pm 11.05$ , respectively (p < 0.05).

General	Distribution K	ı by score scale CCQ	Distribution by score scale SF-36		
characteristics	Good QoL Poor QoL		Good QoL	Poor QoL	
Age $(X \pm SD)$ (n=300)	$76,\!25\pm9,\!47$	$75,\!64 \pm 9,\!21$	$75,\!92\pm9,\!53$	$75,\!97 \pm 9,\!16$	
Female (%) (n=138)	73 (48,67)	65 (43,33)	73 (48,67)	65 (43,33)	
Marital status (currently married) (%) (n=198)	123 (82,0)	75 (50,0)	128 (85,33)	70 (46,67)	
Duration of illness $(X \pm SD)$ (n=300)	$40,\!44 \pm 62,\!68$	99,71 ± 164,32	35,84 ± 59,72	104,31 ± 163,61	
Educational level (high school or above) (%) (n=97)	56 (37,33)	41 (27,33)	63 (42,0)	34 (22,67)	
Mean quality of life score (X $\pm$ SD) (n=300)	40,58	$3 \pm 20,48$	36,90 ± 14,60		

 
 Table 3.37. General Characteristics of Heart Failure Patients by Quality of Life Classification

The average age in the group with good quality of life was slightly lower than in the poor quality of life group for both KCCQ and SF-36 scales—76.25  $\pm$  9.47 and 75.92  $\pm$  9.53, compared to 75.64  $\pm$  9.21 and 75.97  $\pm$  9.16, respectively. However, the differences were not statistically significant (p > 0.05, Mann–Whitney test). Female

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patients accounted for approximately 45% of the sample, with no significant difference between the good and poor quality of life groups across both scales. The average duration of illness in the group with good quality of life was 40.44 months (KCCQ) and 35.84 months (SF-36), significantly shorter than in the poor quality of life group, which had durations of 99.71 months and 104.31 months, respectively. The proportion of patients who were currently married was notably higher in the good quality of life group (82%–85.33%) compared to the poor quality of life group (46.67%–50%). This difference was statistically significant (p < 0.05).



Figure 3.4. Correlation Chart Between Two Quality of Life Assessment Tools in Heart Failure Patients: KCCQ and SF-36

The KCCQ and SF-36 scales showed a strong positive correlation, with a Spearman's correlation coefficient (r) of 0.65, which was statistically significant (p < 0.05; p = 0.0074).

3.2.2. Quality of Life in Elderly Patients with Atrial Fibrillation Table 3.40. Mean Quality of Life Scores Based on the SF-36 Scale in Elderly Patients with Atrial Fibrillation

Domain	<b>X</b> ± <b>SD</b>	Min	Max			
Physical health	$30,88 \pm 24,13$	2,14	94,05			
Mental health	$60,91 \pm 24,13$	43,57	81,43			
Overall health	$42,54 \pm 17,54$	18,19	86,94			

The average physical health score of patients with atrial fibrillation was 30.88  $\pm$  24.13, ranging from 2.14 to 94.05 points. For mental health, the average score was 60.91  $\pm$  24.13, ranging from 43.57 to 81.43 points. The overall health score, calculated based on both physical and mental health, averaged 42.54  $\pm$  17.54 points.



### Figure 3.5. Classification of Quality of Life Scores in Elderly Patients with Atrial Fibrillation

Regarding physical health scores, only 7% of patients were classified in the good-to-excellent category. For mental health, the proportions of patients in the poor-to-fair, fair-to-good, and good-to-excellent categories were 22%, 69.33%, and 8.67%, respectively. As for overall health scores, 56.33% of patients were in the poor-to-fair category, 17% in the fair-to-good category, and 13.33% were in the poor category.

Table 3.41. Association Between Mean Quality of Life Scores (SF-36) and
Characteristics of Elderly Patients With Atrial Fibrillation (n=300)

						,	
Variables		Physical		Mental health		Overall health	
		health					
		<u>X</u> ±SD	р	<u>X</u> ±SD	р	<b>X</b> ± <b>SD</b>	р
	Male (159)	29,99	0,497	60,36	0,349	41,82	0,452
		±		±		±	
Condor		23,69		11,05		17,35	
Gender	Female (141)	31,89		51,53		43,35	
		±		<u>+</u>		±	
		24,67		10,44		17,77	
	60 - 69 (121)	27,89	0,211	60,44	0,783	40,54	0,267
		±		±		±	
		24,36		11,16		17,89	
Age	70-79 (106)	32,98		61,45		44,01	
		±		<u>+</u>		±	
		23,42		10,69		17,03	
	≥ 80 (73)	32,78		60,91		43,70	
		±		±		±	
		24,58		10,30		17,60	

							n
Marital	Currently	35,33	0,0012	63,47	0,0087	46,25	0,0012
status	married (209)	±		$\pm 9,99$		±	
		25,95				18,31	
	Single/Widowed	20,66		55,04		34,01	
	(91)	±		±		<u>+</u>	
		15,05		10,21		11,91	
Educational	High school	43,40	0,0011	64,18	0,0037	51,48	0,0017
level	education or	<b>±</b>		±		<u>+</u>	
	above (118)	25,04		11,86		17,93	
	Below high	22,76		58,79		36,74	
	school	±		$\pm 9,44$		<u>±</u>	
	education (182)	19,71				14,64	
Duration of	$\leq 1$	43,66	0,0051	64,75	0,0058	51,74	0,0048
illness	(138)	<b>±</b>		± 9,82		<u>+</u>	
(year)		26,09				18,19	
-	>1 - <5 (58)	16,45		54,48		31,25	
		±		$\pm 9,48$		<u>±</u>	
		10,99				9,81	
	$\geq$ 5	21,97		59,40	1	36,62	1
	(104)	±		±		±	
		17,37		10,64		13,38	

Elderly patients with atrial fibrillation who were living with a spouse, had a high school education or above, and had been diagnosed for  $\leq 1$  year showed significantly higher quality of life scores—in terms of physical health, mental health, and overall health—compared to those who were single/widowed, had a lower education level, and had been living with the condition for more than 1 year. The differences were statistically significant (p < 0.05).

Table 3.42. General Characteristics of Atrial Fibrillation Patients by	y Quality of
Life Classification Based on AFEQT and SF-36 Scales:	

General	Distribution K	h by score scale CCQ	Distribution by score scale SF-36		
characteristics	Good QoL	Poor QoL	CLCS tốt	Good QoL	
Age (X±SD) (n=300)	73,79 ± 8,68	$72,\!13\pm8,\!53$	$73,\!10\pm8,\!68$	$72,\!83\pm8,\!61$	
Female N(%) (n=141)	69 (46,0)	72 (48,0)	75 (50,0)	66 (44,0)	
Marital status (currently married) (%) (n=209)	131 (87,3)	78 (52,0)	117 (78,0)	92 (61,3)	
Duration of illness $(\overline{X}\pm SD)$ (n=300)	35,46 ± 57,66	90,35 ± 91,12	37,36 ± 58,55	88,45 ± 91,66	

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		10			
Educational level	81 (54,0)	37 (24,7)	90 (60,0)	28 (18,7)	
(high school or					
above) (%) (n=118)					
Left atrial size	39,16 ±	39 69 + 8 83	$3652 \pm 925$	$42.31 \pm 10.08$	
(X±SD) (n=300)	12,27	39,09 ± 0,03	30,32 - 9,23	42,31 ± 10,90	
Left ventricular	64 51 +				
systolic function	10.90	$64,12 \pm 10,53$	$65,31 \pm 8,75$	$63,31 \pm 12,31$	
$(\overline{X}\pm SD)$ (n=300)	10,77				
Left ventricular end-					
systolic diameter	$30.68 \pm 7.45$	29 97 + 7 85	$30.49 \pm 6.82$	$30.10 \pm 8.43$	
$(LVESD)(\overline{X}\pm SD)$	50,08 <u>-</u> 7, <del>4</del> 5	29,97 ± 7,05	50,49 ± 0,62	$50,10 \pm 0,45$	
(n=300)					
Mean quality of life					
score ( $\overline{X} \pm SD$ )	$54,51 \pm 15,93$		$42,54 \pm 17,54$		
(n=300)					

The average age of the group with good quality of life was slightly higher than that of the group with poor quality of life across both the AFEQT and SF-36 scales—73.79  $\pm$  8.68 and 73.10  $\pm$  8.68, compared to 72.13  $\pm$  8.53 and 72.83  $\pm$  8.61, respectively. However, the differences were not statistically significant (p > 0.05, Mann–Whitney test). There was no significant gender difference between the good and poor quality of life groups on either scale. The average duration of illness in the good quality of life group was shorter than in the poor quality of life group: 35.46  $\pm$  57.66 months vs. 90.35  $\pm$  91.12 months (AFEQT), 37.36  $\pm$  58.55 months vs. 88.45  $\pm$  91.66 months (SF-36). The mean initial quality of life score was higher on the AFEQT scale (54.51  $\pm$  15.93) compared to the SF-36 scale (42.54  $\pm$  17.54).



Figure 3.6. Correlation Chart Between Two Quality of Life Assessment Tools in Patients With Atrial Fibrillation: AFEQT and SF-36

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The AFEQT and SF-36 scales demonstrated a moderately strong positive correlation, with a Spearman's correlation coefficient (r) = 0.509, which was statistically significant (p < 0.05; p = 0.0029)

#### Chapter 4 DISCUSSION

# **4.1.** Cardiovascular Disease Structure and Related Factors in Elderly Inpatients at Thong Nhat Hospital, 2022:

The 2022 study conducted at Thong Nhat Hospital revealed a notably high prevalence of cardiovascular disease among elderly inpatients, accounting for 69.54% of all medical records reviewed. The average age of the study population was 74.72  $\pm$  9.14 years, with a relatively even age distribution across the 60–69, 70–79, and  $\geq$ 80 age groups, ensuring good representation of the elderly demographic. The male-to-female ratio was approximately 1.16:1, indicating a relatively balanced gender distribution.

Hypertension was the most prevalent cardiovascular condition, affecting 72.44% of patients, followed by arrhythmias (40.58%) and heart failure (19.47%). These findings are consistent with numerous studies conducted both nationally and internationally. Notably, arrhythmias and heart failure were associated with significantly prolonged hospital stays, exceeding 80 days in some cases. On average, hospital stays ranged from 8.45 to 10.46 days, aligning well with global data.

The distribution of cardiovascular diseases among patients showed distinct patterns: emergency admissions were most commonly linked to hypertension and pericardial diseases, whereas arrhythmias (especially atrial fibrillation) were typically associated with planned admissions. Detailed analysis showed that heart failure was most prevalent among men aged  $\geq$ 80 and women aged 60–69, while arrhythmias—particularly atrial fibrillation—were more common in women aged 70–79 and men aged  $\geq$ 80.

The hospital discharge rate reached 93.6%, and the in-hospital mortality rate was only 0.8%, reflecting the effectiveness of inpatient treatment and the hospital's comprehensive care system. However, compared to international data, post-discharge mortality remains a major concern for elderly cardiovascular patients, highlighting the critical need for continuity of care after hospitalization.

Overall, the findings underscore the heavy burden of cardiovascular disease among the elderly and emphasize the urgent need to strengthen integrated care models, optimize length of stay, and enhance post-discharge follow-up to improve both treatment outcomes and quality of life.

In 2022, Thong Nhat Hospital received and treated a large volume of patients. Of the 15,165 inpatient records, 10,546 cases were diagnosed with cardiovascular diseases. These numbers not only reflect the hospital's large-scale operations, but also confirm the high prevalence of cardiovascular conditions

among its inpatient population.

#### 4.1.4. Cardiovascular Disease Risk Factors

The study found that the prevalence of cardiovascular disease (CVD) was higher in women (70.7%) compared to men (68.5%), with women having a 1.11 times higher risk. This finding contradicts common assumptions and may be linked to a higher rate of obesity in women, as well as biological differences (e.g., hormonal factors, vascular structure) and social differences (e.g., healthcare-seeking behavior, access to medical services) between genders.

Advanced age is a non-modifiable risk factor that significantly impacts the cardiovascular system. Individuals aged  $\geq$ 70 years had a 1.09 times higher risk of CVD compared to those under 70, consistent with previous studies. This reflects age-related physiological changes such as atherosclerosis, endothelial dysfunction, and increased sympathetic tone.

Among modifiable risk factors, body weight stood out. Elderly individuals with obesity had a 3.76 times higher risk of developing CVD compared to those with normal or underweight status. This risk increased with the degree of obesity and was especially high among women. Obesity affects the cardiovascular system through mechanisms such as chronic inflammation, lipid metabolism disorders, and increased cardiac workload.

Smoking and alcohol consumption were also associated with increased CVD risk, by 1.41 times and 1.28 times, respectively, both statistically significant. These substances raise the risk of stroke, particularly among women and with long-term or heavy use.

Dyslipidemia and diabetes mellitus emerged as key metabolic factors associated with CVD. In this study, individuals with dyslipidemia and diabetes had 1.41 and 1.75 times higher risk, respectively, compared to those without these conditions. Many other studies have confirmed the role of LDL-C cholesterol, triglyceride-glucose index, and blood glucose levels in increasing the risk of myocardial infarction, stroke, and heart failure.

These findings emphasize the critical importance of early screening and effective management of metabolic risk factors to reduce the burden of cardiovascular disease in the elderly population.

# **4.2.** Quality of Life Among Elderly Patients With Heart Failure and Atrial Fibrillation Hospitalized at Thong Nhat Hospital, Ho Chi Minh City, in 2023

The study identified the three most common cardiovascular diseases among the elderly: hypertension (72.44%), arrhythmias (40.58%), and heart failure (19.47%). These are all chronic conditions that profoundly affect physical and mental health, as well as overall quality of life (QoL), and are top priorities for geriatric cardiovascular care. Among arrhythmias, atrial fibrillation (AF) was the most frequent (40.98%), a particularly significant arrhythmia in the elderly due to its strong association with hypertension, coronary artery disease, and thromboembolic stroke risk. Chronic symptoms such as palpitations, shortness of breath, and anxiety also substantially impact quality of life. Meanwhile, heart failure (19.47%) is a leading cause of functional decline, frequent hospital readmissions, and mortality in older adults. Fatigue, dyspnea, leg edema, and reduced self-care capacity greatly impair functional independence.

Given this context, the study focused on two representative patient groups: Atrial fibrillation, representing a disease prone to acute complications; and Heart failure, representing a progressive chronic disease causing long-term functional decline.

Assessing quality of life in these two groups provides a comprehensive view of disease burden and supports the development of patient-centered treatment strategies.

#### 4.2.1. Quality of Life in Elderly Patients With Heart Failure

Heart failure is a chronic condition with widespread impacts on patients' quality of life—not only physically but also psychologically and socially. Even with optimal medical treatment, many patients continue to experience low QoL. Symptoms such as dyspnea, fatigue, and limited mobility result in daily functional impairment and contribute to anxiety and depression.

In our study of 300 heart failure patients: The average age was  $75.95 \pm 9.33$ , with a male-to-female ratio of approximately 1:1.17. The average duration of illness was  $70.08 \pm 127.65$  months. 36% of patients had comorbid atrial fibrillation. NYHA functional class was mainly Class III (42.67%) and Class I (30.67%); higher NYHA class correlated with worse QoL. The left atrial size averaged  $40.09 \pm 11.48$  mm, and LV end-systolic diameter was  $31.32 \pm 8.54$  mm. The mean ejection fraction (EF) was  $62.66 \pm 12.23\%$ .

QoL outcomes: Physical health score (SF-36) was low at  $23.51 \pm 19.61$ , indicating severe functional limitation. Mental health score was  $57.84 \pm 10.84$ — somewhat better but still in the lower-middle range. Overall health score averaged  $36.90 \pm 14.60$ . Compared to national and international studies, QoL in our patient population was markedly lower, especially in terms of physical functioning.

Classification results: No patients achieved a good-to-excellent physical health score. Most were in the poor (62%) and poor-to-fair (27.33%) categories. Mental health outcomes were relatively better: no patients were in the "poor" category, and nearly 10% reached "good-to-excellent". Overall, QoL was comprehensively impaired, with physical health being most severely affected.

Related demographic factors: QoL was significantly better in patients who were married and had education levels of high school or above. Longer duration of illness correlated with lower QoL across all three domains (physical, mental, overall). Age showed no statistically significant association with QoL, although patients with better QoL tended to be younger. These findings align with studies by Tran Thi Mai Lien (2022), Hung P Truong (2023), A. Chatzinikolaou (2021), and Ghuloom (2023), all of which confirm the impact of social support, cardiac function, education level, and disease duration on QoL.

In conclusion, patients with chronic heart failure have low quality of life, particularly in the physical health domain. Factors associated with poor QoL include high NYHA class, comorbid atrial fibrillation, longer disease duration, lack of social support, and lower educational attainment. Improving QoL in this population requires a multidimensional management strategy involving symptom control, psychosocial support, and patient education.

#### 4.2.2. Quality of Life in Elderly Patients With Atrial Fibrillation

Atrial fibrillation (AF) is the most common arrhythmia in the elderly. It not only increases the risk of stroke but also has a profound impact on quality of life (QoL). In this study, we evaluated 150 patients with AF, with a mean age of 72.96  $\pm$  8.63 years and a male-to-female ratio of approximately 1.34:1. The average duration of illness was 62.91  $\pm$  80.93 months. Although cardiac structural parameters such as left atrial size and left ventricular function were within normal limits, patients still reported low QoL.

Based on the SF-36 scale, the mean scores were: Physical health:  $30.88 \pm 24.13$ ; Mental health:  $60.91 \pm 24.13$ ; Overall health:  $42.54 \pm 17.54$ . These figures reflect the significant negative impact of AF across multiple aspects of life. Stratified analysis showed that most patients fell into the poor or poor-to-fair QoL categories.

Certain factors were significantly associated with better QoL: Living with a spouse, education level of high school or above, duration of illness  $\leq 1$  year (p < 0.05). In contrast, age and gender showed no significant difference in QoL outcomes.

When comparing the AFEQT and SF-36 instruments, the AFEQT scale demonstrated greater sensitivity in detecting QoL changes, particularly in patients with a shorter disease duration. Comorbidities such as diabetes mellitus or heart failure were associated with notably lower QoL. Interestingly, cardiac parameters like left ventricular end-systolic diameter did not strongly correlate with QoL, suggesting that subjective and psychological factors may play a larger role.

The study indicates that atrial fibrillation negatively affects physical, mental, and social health in a comprehensive manner. Using disease-specific tools such as AFEQT, combined with personalized care strategies and psychosocial support, may improve both treatment effectiveness and patient well-being.

#### CONCLUSION

#### 1. Cardiovascular Disease Structure and Related Factors in Elderly Inpatients at Thong Nhat Hospital, Ho Chi Minh City, in 2022:

During the study period, a total of 10,546 elderly patients with cardiovascular diseases were admitted for inpatient treatment at Thong Nhat Hospital.

The average age of the study population was  $74.72 \pm 9.14$  years. The circulatory system diseases group (Group IX - ICD-10) accounted for the highest proportion, at 69.54% of all hospitalized patients.

The distribution of cardiovascular conditions was as follows: Hypertension: 72.44% (most common), arrhythmias: 40.58%, heart failure: 19.47%, cerebrovascular disease: 11.58%, schemic heart disease: 9.22%, venous diseases: 6.3%, arterial diseases: 2.9%, other heart diseases: 1.7%, cardiomyopathy: 1.39%, pulmonary heart disease: 1.17%, infective endocarditis: 1.01%, pericardial diseases: 0.62% (lowest prevalence).

Factors associated with cardiovascular disease included: Elderly individuals aged  $\geq$ 70 years had a 1.08 times higher risk (95% CI: 1.00–1.17), those who were overweight or obese had a 2.87 times higher risk compared to those with normal/underweight status (95% CI: 2.63–3.14), alcohol consumers had a 1.13 times higher risk (95% CI: 1.04–1.23), smokers had a 1.62 times higher risk (95% CI: 1.5–1.76), patients with dyslipidemia had a 1.25 times higher risk (95% CI: 1.14–1.37), those with diabetes mellitus had a 1.59 times higher risk (95% CI: 1.35–1.87) compared to non-diabetics.

#### 2. Quality of Life in Elderly Patients With Heart Failure and Atrial Fibrillation Hospitalized at Thong Nhat Hospital, Ho Chi Minh City, in 2023: \*Quality of Life in Patients With Heart Failure Based on SF-36 and KCCQ Scales:

- Overall Health: 55.33% of patients were classified as poor-to-fair, 22% were fair-to-good, only 1.67% achieved a good-to-excellent score.

- Physical Health: Very low average score:  $23.51 \pm 19.61$ , majority of patients were in the poor (62%) and poor-to-fair (27.33%) categories, no patients reached the good-to-excellent category.

- Mental Health: Better preserved: average score  $57.84 \pm 10.84$ , no patients in the poor category, 9.67% achieved good-to-excellent scores.

- Associated Factors: Patients living with a spouse had significantly higher overall health scores (41.82  $\pm$  15.06), patients with high school education or above had better scores (40.64  $\pm$  14.30), these differences were statistically significant (p < 0.05).

# \* Quality of Life in Patients With Atrial Fibrillation – SF-36 and AFEQT Findings:

- Overall Health: 56.33% of patients were in the poor-to-fair category, only 17% were fair-to-good, 13.33% were classified as poor.

- Physical Health: Low average score:  $30.88 \pm 24.13$ , most patients were in the poor or poor-to-fair categories, only 7% reached the good-to-excellent level.

- Mental Health: Higher average score:  $60.91 \pm 24.13$ , no patients were in the poor category. The proportions were: Poor-to-fair: 22%, fair-to-good: 69.33%, good-to-excellent: 8.67%.

- Associated Factors: Marital status, educational level, and duration of illness significantly influenced QoL (p < 0.05). Patients who were single/widowed, had education below high school, or had been ill for more than 1 year showed significantly lower QoL scores across all domains: physical, mental, and overall health.

#### RECOMMENDATIONS

Based on the findings of this study on the structure of cardiovascular diseases and the quality of life among elderly inpatients at Thong Nhat Hospital, we propose the following recommendations to enhance cardiovascular disease management and improve patient quality of life:

1. Strengthen Prevention and Screening for Cardiovascular Disease in the Elderly

Priority should be given to screening individuals aged 70 and above who have high-risk factors such as obesity, dyslipidemia, diabetes, smoking, and frequent alcohol use. This group is at significantly higher risk for developing cardiovascular diseases.

2. Promote Counseling and Behavioral Health Interventions

Public health education programs should be expanded to support smoking cessation, alcohol reduction, weight management, and the promotion of balanced nutrition and appropriate physical activity.

3. Integrate Comprehensive Care for Cardiovascular Patients

There should be a shift from isolated disease management to a coordinated care model that integrates symptom control and comorbidity management with mental health care, social support, and rehabilitation.

Patients with heart failure and atrial fibrillation, in particular, should be managed by multidisciplinary teams, including physicians, psychologists, rehabilitation specialists, and social workers.

4. Conduct Regular Monitoring and Evaluation of Quality of Life

Quality of life assessment tools such as SF-36, AFEQT, and KCCQ should be incorporated into routine clinical monitoring, especially for patients with chronic conditions like heart failure and atrial fibrillation. The results should inform individualized treatment plans, psychosocial support, and long-term care strategies.

These recommendations aim to promote more effective cardiovascular disease management and to ensure a comprehensive and sustainable improvement in quality of life for the elderly population.

### **THESIS-RELATED PUBLICATIONS**

## 1. Quality of life of elderly people with tinnitus at Thong Nhat Hospital, Ho Chi Minh City, 2023

Nguyen Thi Thao Suong, Le Dinh Thanh, Nguyen Van Ba, Nguyen Van Chuyen, Ta Quang Thanh. *Journal of Community Medicine*, *51*, 2025: *tr*.168-173.

# 2. Cardiovascular disease structure of elderly inpatients at Thong Nhat Hospital, Ho Chi Minh City, 2022

Nguyen Thi Thao Suong, Le Dinh Thanh, Nguyen Van Ba, Nguyen Van Chuyen, Ta Quang Thanh *Journal of Community Medicine*, *51*, 2025: tr. 226-230.

### 1. Quality of life among elderly patients with heart failure at Thong Nhat Hospital, Ho Chi Minh city, 2023

Nguyen Thi Thao Suong, Le Dinh Thanh, Nguyen Van Ba, Nguyen Van Chuyen, Tong Duc Minh, Ta Quang Thanh

Journal of Military Pharmaco-medicine, 50, 2025, p: 120 – 128.