

THE QUALITY OF LIFE OF NON-VALVULAR ATRIAL FIBRILLATION PATIENTS IN THE NATIONAL HOSPITAL AND ASSOCIATED FACTORS

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Non-valvular atrial fibrillation (NVAF) is a health burden worldwide. This paper outlines the hypothesis that demographic and medical history factors could affect the Quality of life (QoL) score among Vietnamese Non-Valvular Atrial Fibrillation (NVAF) patients. In general, there were 55 (36.2%) patients had good QoL scores. The number of patients with good scores at physical health was 34 (22.4%) and mental health was 87 (57.3%). The factors that were statistically significant were smoking status, hypertension and stroke history. In conclusion, our study showed the prevalence and associated factors with QoL of Vietnamese NVAF patients.

Keywords: Associated factors, non-valvular atrial fibrillation, Quality of life.

I. INTRODUCTION

Non-valvular atrial fibrillation (NVAF) is increasingly becoming a worldwide epidemiology.¹ The frequency of NVAF in individuals aged from 40 to 74 years old grew progressively from 1.90% in 2014 to 2.20% in 2017.² Research estimated that there will be 5.6 million NVAF patients by 2050.³ In the next few years, NVAF could become a new global health burden.

On the other hand, Quality of life (QoL) was described as a general state of well-being that comprises accurate descriptions and subjective judgments of physical, material, social, and emotional well-being, as well as the amount of personal growth and goal-oriented activities, all weighted with a unique set of values.⁴ Research evidence has suggested that QoL could support the status treatment in NVAF patients.⁵ This

seems to highlight the importance of QoL in NVAF patients.

In addition to improving the quality of treatment for NVAF patients, each treatment option's risk and benefit balance is currently the subject of debate. Patients' perception of their QoL is one of the main criteria considered.⁶ For this reason, assessing QoL could be a key factor in clinical decision-making.

Another pertinent point is a lack of knowledge about the effects NVAF could cause on patients' QoL in Vietnamese people. We hypothesized that demographic and medical history factors could be associated with QoL among NVAF patients. Thus, this study aims to determine the QoL score and identify associated factors related to the QoL among Vietnamese NVAF patients.

II. MATERIALS AND METHODS

1. Study design and setting

We conducted a cross-sectional study using a self-reported QoL questionnaire among 152

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NVAF patients at Vietnam National Heart Institute (No. 78 Giai Phong Street, Phuong Dinh Ward, Dong Da District, Ha Noi City, Vietnam) from August to October 2018. Direct interviews were conducted. The inclusion criteria for recruitment was patients diagnosed with atrial fibrillation (AF) based on the results of electrocardiogram showing the typical pattern of AF, which was irregular RR intervals and no discernible, distinct P waves. NVAF patients were restricted to cases where the rhythm disturbance occurs without rheumatic mitral valve disease, a prosthetic heart valve, or mitral valve repair.

2. Measurements

There were 3 parts to our questionnaire. The first part was demographic information, including gender, age, BMI (Body Mass Index) and time duration of treatment. The second part was the medical history, which measured medical status (smoking, hypertension, diabetes mellitus, heart failure, and stroke) and the functional symptoms in patients. The third part was the SF-36 questionnaire, validated and used in Vietnam. The SF-36 has a 36-point scale that assesses eight aspects: physical functioning, role limitations due to physical health, bodily pain, general health perceptions, vitality, social functioning, role limitations due to emotional problems, and mental health. Following the reference, we had used the cut-off points for total QoL was 62 points which was indicating good QoL⁷. According to the reference, we also utilized the cut-off criteria of 60 for good physical health and 64 for good mental health⁷. If the scores of patients were under these cut-off points, they would be considered not good at QoL, physical health, or mental health.

3. Data analysis

The software application used to analyze the data was SPSS version 20.0. We calculated the mean (SD) or median (IQR) for quantitative variables and frequency (percentage) for qualitative variables in descriptive statistics. In order to identify associated factors with the total QoL score of NVAF patients, we performed the logistic regression model. We also used the model to identify the associated factors with the physical and mental health scores. Statistical significance was defined as $p < 0.05$.

4. Research ethics

The purpose of the study was clearly explained to the participants. Only patients who agreed to participate received the questionnaires. The participants had the right to withdraw at any stage if they did not consider any negative consequences and understood that collecting the data was only for study purposes. Patients' information was kept confidential.

III. RESULTS

1. Study characteristics

The sample consisted of 152 participants (Table 1). Overall, more than one-thirds of patients had good QoL. Two-thirds of the patients were less than 65 years old. Furthermore, the majority of participants were male. Half of the patients was underweight. More than two-thirds had under 5 years of treatment NVAF.

Patients with low QoL scores were older. There was no variation in QoL between sexes. As shown in Table 1, patients with a history of hypertension, diabetes and strokes may have had a lesser quality of life.

Table 1. Demographic characteristics of all participants by quality of life group (n=152)

Demographic characteristics	Overall n=152	Quality of life		p-value
		Not good n=97 (63.8%)	Good n=55(36.2%)	
Age (years)				
Mean (SD)	66.2 (13.1)	68.8 (12.3)	61.7 (13.2)	0.001
Median [IQR range]	68.0 [58 - 74]	70 [62 - 77]	63 [54 - 71]	
< 65 years	63 (41.4%)	32 (33.0%)	31 (56.4%)	0.008
Sex				
Male	84 (55.3%)	52 (53.6%)	32 (58.2%)	0.708
BMI group				
Underweight	80 (52.6%)	48 (49.5%)	32 (58.2%)	0.418
Normal	27 (17.8%)	20 (20.6%)	7 (12.7%)	
Overweight	45 (29.6%)	29 (29.9%)	16 (29.1%)	
Duration of disease (years)				
Mean (SD)	4.35 (3.76)	4.76 (3.80)	3.64 (3.63)	0.075
Median [IQR range]	3 [1 - 6]	3 [2 - 7]	2 [1 - 5]	
< 5 years	97 (63.8%)	57 (58.8%)	40 (72.7%)	0.122
Medical history				
Smoking	47 (30.9%)	26 (26.8%)	21 (38.2%)	0.202
Hypertension	92 (60.5%)	76 (78.4%)	16 (29.1%)	<0.001
Diabetes	60 (39.5%)	50 (51.5%)	10 (18.2%)	<0.001
Heart failure	86 (56.6%)	57 (58.8%)	29 (52.7%)	0.582
Stroke	50 (32.9%)	42 (43.3%)	8 (14.5%)	<0.001

As can be seen in table 2, while around one-fifth of patients had good physical health scores, the percentage of good mental health patients

was above 50%. Patients who had a history of hypertension, diabetes, or strokes had lower scores in both physical and mental health.

Table 2. Demographic characteristics of all participants by physical and mental health group (n = 152)

Demographic characteristics	Physical health			Mental health		
	<i>Not good</i>	<i>Good</i>	p-value	<i>Not good</i>	<i>Good</i>	p-value
	n=118 (77.6%)	n=34 (22.4%)		n=65 (42.7%)	n=87 (57.3%)	
Age						
Mean (SD)	66.9 (13.0)	63.9 (13.3)	0.252	68.2 (12.7)	64.7 (13.2)	0.098
Median [IQR range]	68 [58 - 76]	67.0 [58 - 73]		71 [60 - 77]	65 [58 - 73]	
< 65 years	50 (42.4%)	13 (38.2%)	0.815	21 (32.3%)	42 (48.3%)	0.070
Sex						
Male	63 (53.4%)	21 (61.8%)	0.503	31 (47.7%)	53 (60.9%)	0.145
BMI group						
Underweight	59 (50.0%)	21 (61.8%)	0.264	31 (47.7%)	49 (56.3%)	0.569
Normal	24 (20.3%)	3 (8.8%)		13 (20.0%)	14 (16.1%)	
Overweight	35 (29.7%)	10 (29.4%)		21 (32.3%)	24 (27.6%)	
Duration of disease (years)						
Mean (SD)	4.48 (3.78)	3.93 (3.75)	0.457	4.62 (4.00)	4.15 (3.59)	0.458
Median [IQR range]	3 [2 - 6]	2.5 [1 - 5.75]		3 [2 - 6]	3 [1 - 6]	
< 5 years	73 (61.9%)	24 (70.6%)	0.465	41 (63.1%)	56 (64.4%)	1.000
Medical history						
Smoking	35 (29.7%)	12 (35.3%)	0.678	12 (18.5%)	35 (40.2%)	0.007
Hypertension	86 (72.9%)	6 (17.6%)	<0.001	51 (78.5%)	41 (47.1%)	<0.001
Diabetes	56 (47.5%)	4 (11.8%)	<0.001	36 (55.4%)	24 (27.6%)	<0.001
Heart failure	69 (58.5%)	17 (50.0%)	0.495	36 (55.4%)	50 (57.5%)	0.927
Stroke	45 (38.1%)	5 (14.7%)	0.019	31 (47.7%)	19 (21.8%)	0.001

2. Associated factors

Table 3 presents the associated factors with QoL among NVAF patients. We found 3 associated factors in the multivariate logistic regression model. The evidence showed

that NVAF patients who did not smoke, have hypertension, or stroke history could have better total QoL scores. Further analysis showed that the NVAF patients without hypertension history

had better physical health scores than those who had. There was a strong link between the number

of times NVAF patients smoked and had high blood pressure and their mental health scores.

Table 3. Association between the related factors and Quality of Life score (n = 152)

Factors	QoL (Good)	Physical health (Good)	Mental health (Good)
	Odds Ratios (95% CI)	Odds Ratios (95% CI)	Odds Ratios (95% CI)
Sex (Male)	0.64 (0.21 – 1.82)	1.59 (0.49 – 5.28)	1.10 (0.44 – 2.72)
Age (< 65 years)	1.87 (0.82 – 4.35)	0.38 (0.13 – 1.00)	1.23 (0.56 – 2.68)
BMI (Normal)	0.44 (0.13 – 1.46)	0.25 (0.05 – 1.04)	0.61 (0.22 – 1.70)
BMI (Over weight)	0.76 (0.28 – 2.03)	0.56 (0.18 – 1.68)	0.66 (0.28 – 1.59)
Duration of NVAF (<5 years)	1.95 (0.80 – 4.92)	1.12 (0.40 – 3.24)	1.01 (0.46 – 2.22)
Smoking (No)	3.46 * (1.16 – 11.24)	1.42 (0.42 – 5.04)	3.30 * (1.25 – 9.19)
Hypertension history (No)	7.27 *** (2.99 – 18.91)	11.60 *** (3.90 – 40.14)	3.07 * (1.32 – 7.45)
Diabetes mellitus (No)	1.92 (0.72 – 5.24)	2.68 (0.76 – 10.86)	1.77 (0.77 – 4.06)
Heart failure (No)	1.46 (0.62 – 3.52)	1.26 (0.47 – 3.38)	0.88 (0.41 – 1.90)
Stroke (No)	3.27 * (1.20 – 9.72)	2.26 (0.65 – 8.89)	2.25 (0.99 – 5.15)

* $p < 0.05$ - ** $p < 0.01$ - *** $p < 0.001$

IV. DISCUSSION

Our study found that the prevalence of good QoL scores was not quite high among patients with NVAF, and the QoL scores depended on some related factors. Some similar and different ones have been shown compared to other studies. So, we had some explanations for these highlights.

Some of the patients who participated in our study were quite old, so that might be the reason why the prevalence of QoL scores was quite low. These statements were shown in the study in Turkey in 2015⁸ The authors concluded that some demographics, such as age, could affect the physical and mental health of NVAF

patients. Thus, old NVAF patients might need more medical support than others.

Interestingly, our study found a link between smoking habits and a statistically significant decrease in QoL. The multivariate regression results also showed that smoking patients have a lower QoL than those who do not. In the results, this difference between nonsmokers was higher than smokers. It was similar to Chamberlain's study.¹³ Another high point was that this study showed that smoking behavior increases the risk of coronary artery disease. Still, there is a lack of evidence proving that smoking increases AF.¹³ Because of all this information, smoking NVAF patients must have access to smoking cessation. This could improve their QoL.

It is worth noting that to mention the correlation between NVAF and hypertension. Our results found that the prevalence of NVAF patients without hypertension had QoL scores were higher than those who did. In addition, hypertension was associated with cardiovascular events prior to the appearance of NVAF patients.¹⁰ This underlines the importance of monitoring blood pressure in NVAF patients with high blood pressure.

Another medical history that needs to be considered in NVAF patients is a stroke. History of NVAF patients with a stroke diagnosis has poorer QoL than those without the disease. A similar result between our study and the study by Ja-Young Kim⁹ had shown that NVAF might caused negative effects on stroke patients. Since AF was associated with a markedly negative result in rehabilitation patients with stroke, early recognition and proper treatment of AF might benefit an effective rehabilitation. The role of atrial fibrillation as a prognostic factor in stroke has not been studied thoroughly. However, most previous studies reported that atrial fibrillation was related to more frequent

stroke recurrence and a higher fatality rate. It is also not yet clear how AF affects the process of recovery from stroke. The most serious concern of rehabilitation professionals is the effect of AF on functional and clinical outcomes and long-term follow-up of patients with stroke. Considering the high prevalence of atrial fibrillation in patients with stroke, it is important to determine the relationship between atrial fibrillation and stroke progress.

Study limitations

There were limitations in our study. Initially, we used only one QoL measurement. It is possible that patients with poor QoL often do not fill out the forms, which resulted in data distortion. Not all patients had a complete record within the expected time, and one of the main reasons for the difference between expected and actual data was the patient's refusal to complete the form. Our study was also limited by the small sample size. However, our analysis suggests that the propensity for missing data is minimal.

V. CONCLUSIONS

In summary, the prevalence of good QoL scores and physical and mental health scores in NVAF was low. Otherwise, clinical physicians should consider NVAF patients who have a history of smoking, hypertension, or stroke history because these patients might have lower QoL than other patients.

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DISCLOSURES

The authors declare that there is no conflict of interest.

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