



Factors Related to Treatment Compliance Among Patients With Heart Failure

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Background: Treatment compliance can not only prevent complications among patients with heart failure but also improve their health, quality of life, decrease hospitalization, and mortality rate.

Objective: To examine the treatment compliance among patients with heart failure, and identify factors related to treatment compliance.

Methods: The descriptive correlational study was carried out in 112 participants by a random sampling technique in the Cardiovascular Department, C Hospital, Vietnam. Data were collected during June to August 2019. Four instruments were used: 1) Demographic and clinical conditions; 2) the Revised Heart Failure Compliance Scale; 3) Mini Mental State Examination (MMSE); and 4) the Japanese Heart Failure Knowledge Scale (JHFKS). Data were analyzed by chi-square test and Spearman rank correlation.

Results: Among 54.5% of participants were demonstrated treatment compliance. Compliance with the medication and routine checkup were high (> 80%), whereas doing exercise, fluid restriction and weighing daily were low (43.8%, 33.8%, and 16.1%, respectively). Factors included gender, education level, numbers of hospitalization during the past year, comorbidities, heart failure knowledge, and cognitive function were significantly related to treatment compliance ($P < .05$).

Conclusions: Patients should enhance heart failure knowledge in order to improve treatment compliance. By doing this, heart failure patients were supplied information about the disease when they are hospitalized. Patients with cognitive impairment were also paid attention to improve treatment compliance.

Keywords: Treatment compliance, Heart failure, Cognitive function

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Introduction

Heart failure is the last evolution of many cardiovascular diseases.¹ Heart failure does not only decrease patient's capacity but also is one of the leading to mortality.¹ In the recent 2 decades, mortality caused by ischemic heart disease and stroke has considerably reduced, whereas mortality from heart failure has gradually increased.¹ Nowadays, heart failure is referred to as a worldwide disease.¹ In the United States, there were 5.7 million people with heart failure reported in 2017, and this number has rapidly increased.² In Sweden, 1.8% of the population had heart failure and this rate was equal in both genders.² This is also a serious health issue in Asia with about 1 million people with heart failure.³ Moreover, the number of patients with heart failure is higher in the southeastern Asian countries as compared to other countries in the world.⁴ People with acute heart failure in this region were younger than in the United States (54 years vs 75 years, respectively), and they also had worse clinical symptoms, higher rate of mechanical ventilation, longer duration of hospitalization and higher in hospital mortality.⁴

In Vietnam, prevalence and mortality of cardiovascular disease has rapidly increased, and is also the leading cause of death.⁵ Although there has not been any officially published research about the prevalence of heart failure in Vietnam, it has been estimated about 0.3 to 1.6 million people with heart failure.⁶ According to the statistics of Hanoi Heart Hospital in 2016, the proportion of hospitalization caused by heart failure accounted for 15% in the total of hospitalized patients.

Treatment compliance plays an important role in patients with heart failure because it can influence the patient's health as it can decrease rehospitalization and mortality, and improve quality of life.⁷ In addition, treatment noncompliance leads to many consequences such as impaired cardiac function, pathological changes, aggravating signs and symptoms of disease, increasing the severity of health problems, medical costs, risk of death and disability.⁸ Therefore, treatment compliance is a crucial factor of health maintenance in patients with heart failure.

Patients should adhere to treatment methods including medication and lifestyle changes.⁹ Compliance with medication is defined as patients take the medicine as the physician orders.⁹ Lifestyle changes are compliances with diet (such as salt restriction, fluid restriction, low fat intake), regular exercise, weight control, alcohol and substance using restrictions, nonsmoking, managing stress, monitoring blood pressure, recognizing symptoms and monitoring treatment process.⁹

In Vietnam, treatment compliance in patients with heart failure was low.⁹ One study demonstrated that 37% of patients with heart failure did not take medication as ordered, and 10% of patients did not regularly monitor their symptoms.¹⁰ The similar proportion was noted for patients without routine checkups, and 52.5% continued on a normal salt diet after discharge from the hospital.¹⁰ The study of Nguyen Ba Tam in the Nam Dinh General Hospital out of Danang displayed the moderate level of treatment compliance among patients with heart failure.⁹ This reported first study on treatment compliance among patients with heart failure in Da Nang.

Factors related to treatment compliance are divided into 3 components, including patient factors, treatment factors, and health provider factors.⁷ This study focused on the patient factors. Based on the previous studies, patient factors related to treatment compliance including clinical conditions, demographic variables, cognitive factor, and knowledge of heart failure.^{7,11} Demographic variables in this study consisted of age, gender, education level, marital status, and fee payment. Clinical conditions were defined as duration of heart failure, New York Heart Association (NYHA) classification, numbers of hospitalization during the past year, and comorbidities.

Age and gender were potential factors related to treatment compliance, however the relationships were inconsistent among studies.¹²⁻¹⁴ Patients who had higher education level had knowledge of disease better, so they performed treatment compliance strictly.⁷ Duration of heart failure, NYHA classification, numbers of hospitalization, and comorbidities were identified as factors

correlated to treatment compliance in some studies.¹⁴⁻¹⁶ For instance, patients had previous hospitalization because of heart failure practiced better treatment compliance.¹⁵ The presence of comorbidities such as hypertension led to the poor treatment compliance.¹⁴ It has been indicated that heart failure knowledge positively related to treatment compliance.¹³

In addition, numerous studies stated that level of cognitive function correlated to treatment compliance among patients with heart failure.¹⁶⁻¹⁸ Heart failure patients who were cognitive impairment got poorly overall adherence, especially in daily weighing, regular exercise, and fluid restriction.¹⁹

In spite of prevalence of heart failure has been increasing in Vietnam⁶ and treatment compliance had played important role in controlling the illness, there was scant evidence for level of treatment adherence as well as related factors among this group of patients carried out in Da Nang. This study aimed to examine the relationships between demographic variables, clinical conditions, heart failure knowledge, and cognitive function and with treatment adherence. The findings will support treatment adherence among patients with heart failure. It will be a valuable evidence to treatment compliance for patients with heart failure in the future.

Methods

Participants

The descriptive cross-sectional design was used in this study. Participants who were selected by random sampling technique had heart failure were treated in the Cardiovascular Department, C Hospital, Da Nang, Vietnam. The eligibility criteria of participants were as follows: aged of 18 years and over; had diagnosed with heart failure more than 3 months; understood Vietnamese language; agreed to join this study. The sample size was calculated by the G*power program to determine the minimal number of participants. The correlation coefficient was 0.331 which was identified

by correlation analysis between cognitive function and treatment compliance by the Revised Heart Failure Compliance Scale,¹⁹ alpha error probability was 0.05, power was 0.95, and the 2-sided was used. The sample size was calculated 112, so 112 participants were required as a minimal adequate sample size.

Ethics

The study was approved by the Da Nang University of Medical Technology and Pharmacy with the number of approval decision 165/QD-DHKTYDDN on April 24, 2019. Additionally, the study was accepted to collect data in the C Hospital.

Instruments

The instruments included 4 parts. Part A, demographic and clinical conditions consisted of age, gender, education level, marital status, fee payment, duration of heart failure, NYHA classification, numbers of hospitalization during the past year, and comorbidities.

Part B, the Revised Heart Failure Compliance Scale was used to investigate treatment compliance among patients with heart failure. The contents of this scale were about compliance with salt restriction in diet, fluid restriction, regular exercise, daily weighing, medication and routine checkups. The scale consisted of 6 questions of 5-point Likert scales from 0 score (never) to 4 scores (always). Patients were asked to estimate their compliance during the past week for medication, salt restriction in diet, fluid restriction, and regular exercise, during the past month for daily weighing, and during the past 3 months for routine checkups. Patients were evaluated to perform compliance when they chose the answer “always” or “mostly”, and noncompliance when they answered “never” and “seldom”. Patients were noted as “compliance” if they got at least 4 out of 6 recommendations.²⁰ The Cronbach’s alpha of this scale was 0.77.

Part C, Mini Mental State Examination (MMSE) used to examine cognitive function. MMSE was a popular screening test to measure orientation, memory,

attention, language function, and visual-spatial skills.²¹ The score ranges from 0 to 30 with more than 24 defined as normal function; 18 - 23 as mild cognitive impairment, and less than 17 as severe cognitive impairment.

Part D, knowledge of patients was evaluated by the Japanese Heart Failure Knowledge Scale (JHFKS). JHFKS included 15 questions of Yes/No/I don't know type. Participants were asked about 02 items of general heart failure knowledge, 05 items of signs and symptoms of heart failure, and 08 items of self-care recommendation. If participants answered correctly, they got 1 mark, and in opposite, they got 0, if they answered wrongly or said "I don't know". The scale had a minimum score of 0 and a maximum of 15 points. According to the previous study, patients who got good knowledge when they answered correctly more than 75%.²² The Kuder-Richardson reliability coefficient of this scale was 0.79.

Data Collection

Patients with heart failure were potentially eligible for the study. Patients were provided study information and informed consent. After receiving the acceptance to join the study, the researcher interviewed patients one by one. The procedure often took about 20 minutes for each patient during June to August 2019.

Statistical Analysis

Data were analyzed with SPSS version 21.0 (IBM SPSS Statistics for Windows, Version 21.0. Armonk, NY: IBM Corp; 2012). Descriptive statistics were applied to characterize patients' information. Level of significant and the confidence interval were set at 5% and 95%, respectively. The relationships between demographic variables, clinical condition and treatment compliance were examined by chi-square test. Normality of continuous variable was evaluated by Kolmogorov-Smirnov test. The correlations between cognitive function, heart failure knowledge and treatment compliance were identified with Spearman rank correlation (r_s) when the variables did not match the normal distribution.

Results

Demographic and Clinical Conditions

The average (range) age of 112 heart failure patients was 77.6 (49 - 93) years (standard deviation [SD], 9.1). Almost 98.2% of patients were older than 60 years, and 58.9% of patients were female. A large number of patients had health insurance (92%). Most had comorbid hypertension (68.8%). The average (range) duration of heart failure was 5.5 (1 - 42) years (SD, 6.3), and 72.3% of patients were under 5 years. Patients with New York Heart Association (NYHA) class III were hospitalized in 45.5%. About 50% of patients admitted twice in the year (Table 1).

Treatment Compliance

The finding showed that 56.3% demonstrated treatment compliance. Compliance with medication was accounted for 99.1%. Routine checkups and salt restriction were also in 83.0% and 70.5%. In contrast, 3 recommendations were noncompliant including regular exercise, fluid restriction, and daily weighing (43.8%, 34.8%, and 16.1%, respectively) (Figure 1).

Cognitive Function

The mean of MMSE was 25.5 (SD, 5.048) in the actual range from 9 to 30. About three quarters had normal cognitive function (70.5%).

Table 1. Demographic and Clinical Information of Patients With Heart Failure

Characteristic	No. (%)
Age, y	
< 60	2 (1.8)
≥ 60	110 (98.2)
Gender	
Male	46 (41.1)
Female	66 (58.9)
Education level	
Under high school	67 (59.8)
High school and over	45 (40.2)

Table 1. Demographic and Clinical Information of Patients With Heart Failure (Continued)

Characteristic	No. (%)
Marital status	
Single	2 (1.8)
Married	110 (98.2)
Fee payment	
Health insurance	103 (92)
Self-paid	9 (8)
Duration of heart failure, y	
< 5	81 (72.3)
5 - 10	21 (18.8)
> 10	10 (8.9)
NYHA classification	
I	26 (23.2)
II	29 (25.9)
III	51 (45.5)
IV	6 (5.4)
Numbers of hospitalization during the past year	
1	32 (28.6)
2	56 (50.0)
≥ 3	24 (21.4)
Comorbidities*	
Hypertension	77 (68.8)
Diabetes	22 (19.6)
Chronic obstructive pulmonary disease	8 (7.1)
Others	24 (21.4)

Abbreviation: NYHA, New York Heart Association.

* Patient might have multiple comorbidities.

Heart Failure Knowledge

The average score of heart failure knowledge was 7.98 out of 15 (SD, 2.989) with the actual range of 1 - 14. The large number (80.5%) of patients had poor knowledge.

Correlations Between Demographic and Clinical Conditions, MMSE, Heart Failure Knowledge and Treatment Compliance

Treatment compliance showed no relationship with patient's age, married status, fee payment, duration of heart failure, and NYHA classification ($P > .05$), whereas gender, education level, numbers of hospitalization during the past year, comorbidities ($P < .05$) (Table 2). In addition, cognitive function and heart failure knowledge positively correlated with treatment compliance ($r_s = 0.29$ and $r_s = 0.23$, respectively, $P < .05$) (Table 3).

Figure 1. Treatment Compliance of Patients With Heart Failure

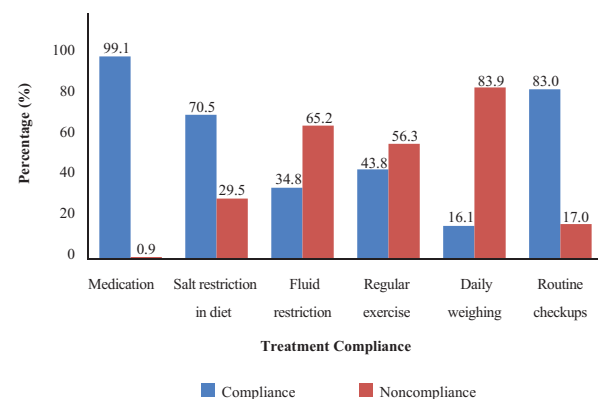


Table 2. Relationships Between Demographic and Clinical Conditions and Treatment Compliance Among Patients With Heart Failure

Variable	No. (%)		P Value*
	Treatment Compliance		
	Compliance	Noncompliance	
Age, y			
< 60	1 (50.0)	1 (50.0)	.706
≥ 60	50 (45.5)	60 (54.5)	

Table 2. Relationships Between Demographic and Clinical Conditions and Treatment Compliance Among Patients With Heart Failure (Continued)

Variable	No. (%)		P Value*
	Treatment Compliance		
	Compliance	Noncompliance	
Gender			
Male	31 (67.4)	15 (32.6)	.022
Female	30 (45.5)	36 (54.5)	
Education level			
Under high school	30 (44.8)	37 (55.2)	.001
High school and over	14 (31.1)	31 (68.9)	
Married status			
Single	0 (0)	2 (100)	.205
Married	61 (55.5)	49 (44.5)	
Fee payment			
Health insurance	56 (54.4)	47 (45.6)	.527
Self-paid	5 (55.6)	4 (44.4)	
Duration of heart failure, y			
< 5	45 (55.6)	36 (44.4)	.925
5 - 10	11 (52.4)	10 (47.6)	
> 10	5 (50.0)	5 (50.0)	
NYHA classification			
I	12 (46.2)	14 (53.8)	.12
II	12 (41.3)	17 (58.6)	
III	34 (66.7)	17 (33.3)	
IV	3 (50.0)	3 (50.0)	
Numbers of hospitalization during the past year			
1	17 (53.1)	15 (46.9)	.038
2	36 (64.3)	20 (35.7)	
≥ 3	8 (33.3)	16 (66.7)	
Comorbidities			
Hypertension	38 (50.7)	37 (49.3)	.027
Diabetes	16 (72.7)	6 (7.3)	
Chronic obstructive pulmonary disease	14 (66.7)	7 (33.3)	
Others	26 (65.0)	14 (35.0)	

Abbreviation: NYHA, New York Heart Association.

 * The statistically significance was determined at $P < .05$.

Table 3. Relationships Between MMSE, Heart Failure Knowledge, and Treatment Compliance Among Patients With Heart Failure

Variable	Treatment Compliance	
	Correlation	P Value*
MMSE	0.29	< .05
Heart failure knowledge	0.23	< .05

Abbreviation: MMSE, Mini Mental State Examination.

*The relationships were determined by using Spearman rank correlation with a significant level of .05 ($P < .05$).

Discussion

This study provided data about the treatment compliance among adult patients with heart failure in Da Nang. Although these found just 56% with compliance, the rate was corresponded with previous studies.^{9, 23} In the descriptive correlational study conducted on 126 older adults with heart failure in Thai Nguyen, a province in the Northern of Vietnam, the low self-care behaviors including diet restriction, exercise, weigh controlling, fluid intake restriction, medication, and regular checkup visits were revealed (50.9%).²³ This result was relatively comparable to the study carried out in Nam Dinh, another province of the Vietnam Northern, what showed treatment compliance in the medium level.⁹ Compare to other studies, this result was higher than the data from the Netherlands, Ethiopia, and Sudan (48%, 22.3%, and 28.9%, respectively).^{12, 24, 25} This level of treatment compliance was also higher than the study's finding in Poland conducted on 170 patients with heart failure.¹⁹

In the study, compliance with medication reached 99.1%, whereas adherence to daily weighing was in the lowest rate (16.1%). This result was consistent with the study from Seid et al,¹² showing that 8.4% of patients was compliant with daily weighing, 19.4% of patients doing exercise regularly, 64% performed salt restriction, and 86% did routine checkups.¹² The findings from others studies in the order from low to high as follows: daily weighing,^{18, 26} regular exercise,^{7, 27} salt restriction in diet,^{18, 19} fluid restriction,^{11, 19} taking medicine as physician's order,^{7, 17} and

routine checkups.¹² The reason of low compliance with daily weighing was likely from being forgotten, or unaware.²⁶ The high rate of medication adherence in most studies caused by patients took their time to take medicine.²⁶

This study indicated that gender, education level, numbers of hospitalization during the past year, and comorbidities significantly associated to treatment compliance ($P < .05$). Firstly, the study proved the number of males and females who maintained treatment compliance was relatively similar, whereas the study of Seid et al,¹² showed that gender was regarded as a nonmodifiable factor that related to self-care compliance stated that male patients performed treatment compliance 2.3 times than females. However, Ok and Choi¹³ demonstrated that women complied better than men in the study from Korea. Secondly, education level was also related to treatment compliance ($P < .01$). The result was the same as the study of Van der Wal et al⁷ that suggested low education level correlated to low adherence in diet, fluid restriction and medication. The authors explained that patients with lower education level were not able to learn how to do adhere and they had to spend more time to explore the way to practice compliance.²³ Thirdly, numbers of hospitalization during the past year correlated to treatment compliance ($P < .05$). Patients who admitted hospital twice a year maintained treatment compliance with the highest rate (64.3%). Patients who used to hospitalize before has higher compliance rate because they had experience about the symptoms of disease and received some information from healthcare providers during admission.¹⁵ However, number of hospitalization was not a factor related to medication adherence in the study in Iran.⁸ Fourthly, the finding of comorbidities associated to treatment compliance ($P < .05$). It seemed as similar to previous study because comorbidities were a barrier for patients to do compliance.¹² Seid et al¹² showed that patients had no comorbidities did treatment compliance 2.6 times than ones had hypertension, diabetes, hyperthyroidism. As patients had comorbidities, it was difficult for them to do adherence in treatment as follow: taking medicine, diet restriction, symptoms monitoring, and making decision to manage these diseases.⁹

The study concluded that cognitive function and treatment compliance positively related ($r_s = 0.29, P < .01$). The result agreed with the previous studies. A study of Murad et al¹⁶ demonstrated mild cognitive impairment was negatively correlated to rehospitalization rate or mortality in 30 days because patients did not implement rigorous treatment compliance. Dickson et al¹⁷ recognized that cognitive function significantly predicted self-care behaviors in patients with heart failure, especially in recommendations of assurance sodium intake in diet. In contrast, Dolansky et al²⁸ analyzed the relationship between cognitive impairment and compliance with salt restriction in diet. This suggested that patients with cognitive impairment met difficulties in correctly collecting urine sample to test, but cognitive function had no relationship to salt intake in daily meals. In the study of Cameron et al,¹⁸ although mild cognitive impairment significantly correlated monitoring symptoms, cognitive function also had not related to salt restriction in diet.

Another factor remarkably related to treatment compliance was heart failure knowledge. The study showed heart failure knowledge had a positive relationship to treatment compliance ($r_s = 0.23, P < .05$). Patients who were well-prepared about signs, symptoms, and heart failure self-care behaviors performed more thorough and stricter than others who did not know about the information.¹² This result was similar to most previous studies.^{17, 22, 28} When compared, Seid et al¹² identified patients who had good heart failure knowledge had higher treatment compliance 2.5 times than who had lower knowledge. The study of Ok and Choi,¹³ and study of Matsuoka et al²⁹ concluded

that poor heart failure knowledge statistically related to noncompliance among patients with heart failure.^{22, 28} Enhancing heart failure knowledge was crucial to increase treatment compliance and decrease hospitalization rate, especially in heart failure patients lived in the rural region.³⁰ To improve treatment compliance among patients with heart failure, the best way was attention to health education to patients in order to enrich their knowledge.³¹

The study has some limitations. The small sample size of the study could not generalize the population. Additionally, the descriptive cross-sectional design could not deduce from the causal relationship.

Conclusions

The study revealed the first data of treatment compliance among patients with heart failure in Da Nang as well as advantage factors related to perform the adherence. According to the results, enhancing knowledge about heart failure to patients was an indispensable issue. Moreover, performing treatment compliance should also pay attention to heart failure patients with cognitive impairment. Additionally, monitoring treatment compliance in hospital should also be closer and stricter.

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References

1. Benjamin EJ, Virani SS, Callaway CW, et al. Heart disease and stroke statistics-2018 update: a report from the American Heart Association. *Circulation*. 2018;137(12):e67-e492. doi:10.1161/CIR.0000000000000558.
2. Savarese G, Lund LH. Global public health burden of heart failure. *Card Fail Rev*. 2017;3(1):7-11. doi:10.15420/cfr.2016:25:2.
3. Sakata Y, Shimokawa H. Epidemiology of heart failure in Asia. *Circ J*. 2013;77(9):2209-2217. doi:10.1253/circj.cj-13-0971.
4. Reyes EB, Ha JW, Firdaus I, et al. Heart failure across Asia: same healthcare burden but differences in organization of care. *Int J Cardiol*. 2016;223:163-167. doi:10.1016/j.ijcard.2016.07.256.
5. Centers for Disease Control and Prevention. Global Health - Vietnam,



2018. <https://www.cdc.gov/global-health/countries/vietnam/default.htm>. Accessed February 20, 2020.
6. Do TNP, Nguyen ADT. Investigation of prognostic factors of mortality in patients with heart failure ejection fraction who were less hospitalization at the Heart Institute in Ho Chi Minh City. <http://timmachhoc.vn/khao-sat-cac-yeu-to-tien-luong-tu-vong-tren-benh-nhan-suy-tim-phan-suat-tong-mau-giam-nhap-vien-tai-vien-tim-tp-hcm/>. Published December 26, 2019. Accessed February 20, 2020.
 7. van der Wal MH, Jaarsma T, Moser DK, Veeger NJ, van Gilst WH, van Veldhuisen DJ. Compliance in heart failure patients: the importance of knowledge and beliefs. *Eur Heart J*. 2006;27(4):434-440. doi:10.1093/eurheartj/ehi603.
 8. Amininasab SS, Lolaty HA, Moosazadeh M, Shafipour V. Medication adherence and its predictors among patients with heart failure. *Nurs Midwifery Stud*. 2018;7(2):81-86. doi:10.4103/nms.nms_9_17.
 9. Tam NB, Chunlestskul K, Deoisres W, Rosenberg E. Factors predicting treatment adherence among patients with heart failure in Vietnam. *IJSER*. 2016;7(10):43-53.
 10. Kieu TTH, Nguyen TH. *The First Step in Using SCHFI Scale to Assess Self-Care on Heart Failure Patients in Cardiovascular Hospital*. Hanoi: Hanoi Medical University; 2011.
 11. Kato N, Kinugawa K, Ito N, et al. Adherence to self-care behavior and factors related to this behavior among patients with heart failure in Japan. *Heart Lung*. 2009;38(5):398-409. doi:10.1016/j.hrtlng.2008.11.002.
 12. Seid MA, Abdela OA, Zeleke EG. Adherence to self-care recommendations and associated factors among adult heart failure patients. From the patients' point of view. *PLoS One*. 2019;14(2):e0211768. doi:10.1371/journal.pone.0211768.
 13. Ok JS, Choi H. Factors affecting adherence to self-care behaviors among outpatients with heart failure in Korea. *Korean J Adult Nurs*. 2015;27(2):242-250. doi:10.7475/kjan.2015.27.2.242.
 14. Bagchi AD, Esposito D, Kim M, Verdier J, Bencio D. Utilization of, and adherence to, drug therapy among medicaid beneficiaries with congestive heart failure. *Clin Ther*. 2007;29(8):1771-1783. doi:10.1016/j.clinthera.2007.08.015.
 15. Mantovani VM, Ruschel KB, Souza EN, Mussi C, Rabelo-Silva ER. Adesão ao tratamento de pacientes com insuficiência cardíaca em acompanhamento domiciliar por enfermeiros. *Acta Paul Enferm* 2015;28(1):41-47. doi:10.1590/1982-0194201500008.
 16. Murad K, Goff DC Jr, Morgan TM, et al. Burden of comorbidities and functional and cognitive impairments in elderly patients at the initial diagnosis of heart failure and their impact on total mortality: the cardiovascular health study. *JACC Heart Fail*. 2015;3(7):542-550. doi:10.1016/j.jchf.2015.03.004.
 17. Dickson VV, Tkacs N, Riegel B. Cognitive influences on self-care decision making in persons with heart failure. *Am Heart J*. 2007;154(3):424-431. doi:10.1016/j.ahj.2007.04.058.
 18. Cameron J, Worrall-Carter L, Page K, Riegel B, Lo SK, Stewart S. Does cognitive impairment predict poor self-care in patients with heart failure? *Eur J Heart Fail*. 2010;12(5):508-515. doi:10.1093/eurjhf/hfq042.
 19. Jankowska-Polańska B, Kuśnierz M, Dudek K, Jaroch J, Uchmanowicz I. Impact of cognitive function on compliance with treatment in heart failure. *J Educ Health Sport*. 2017;7(2):392-414. doi:10.5281/zenodo.400294.
 20. Evangelista LS, Berg J, Dracup K. Relationship between psychosocial variables and compliance in patients with heart failure. *Heart Lung*. 2001;30(4):294-301. doi:10.1067/mhl.2001.116011.
 21. Folstein MF, Folstein SE, McHugh PR. "Mini-mental state". A practical method for grading the cognitive state of patients for the clinician. *J Psychiatr Res*. 1975;12(3):189-198. doi:10.1016/0022-3956(75)90026-6.
 22. Kato N, Kinugawa K, Nakayama E, et al. Development and psychometric properties of the Japanese heart failure knowledge



- scale. *Int Heart J.* 2013;54(4): 228-233. doi:10.1536/ihj.54.228.
23. Huyen NN, Dung NT. Factors related to self-care behaviors among older adults with heart failure in the General Hospital in Thai Nguyen, Vietnam. *J Vietnam Cardiol.* 2014;64(88): 26-33.
24. Al-khadher MAA, Fadl-Elmula I, Ahmed WAM. Compliance to treatment and quality of life of Sudanese patients with heart failure. *Int J Prev Med.* 2015;1(2): 40-44.
25. van der Wal MH, van Veldhuisen DJ, Veeger NJ, Rutten FH, Jaarsma T. Compliance with non-pharmacological recommendations and outcome in heart failure patients. *Eur Heart J.* 2010;31(12): 1486-1493. doi:10.1093/eurheartj/ehq091.
26. van der Wal MH, Jaarsma T, van Veldhuisen DJ. Non-compliance in patients with heart failure; how can we manage it? *Eur J Heart Fail.* 2005;7(1):5-17. doi:10.1016/j.ejheart.2004.04.007.
27. Tefera YG, Abegaz TM, Abebe TB, Mekuria AB. The changing trend of cardiovascular disease and its clinical characteristics in Ethiopia: hospital-based observational study. *Vasc Health Risk Manag.* 2017;13:143-151. doi:10.2147/VHRM.S131259.
28. Dolansky MA, Schaefer JT, Hawkins MA, et al. The association between cognitive function and objective adherence to dietary sodium guidelines in patients with heart failure. *Patient Prefer Adherence.* 2016;10:233-241. doi:10.2147/PPA.S95528.
29. Matsuoka S, Tsuchihashi-Makaya M, Kayane T, et al. Health literacy is independently associated with self-care behavior in patients with heart failure. *Patient Educ Couns.* 2016;99(6):1026-1032. doi:10.1016/j.pec.2016.01.003.
30. Dracup K, Moser DK, Pelter MM, et al. Rural patients' knowledge about heart failure. *J Cardiovasc Nurs.* 2014;29(5):423-428. doi:10.1097/JCN.0b013e31829c9cbf3.
31. Unverzagt S, Meyer G, Mittmann S, Samos FA, Unverzagt M, Prondzinsky R. Improving treatment adherence in heart failure. *Dtsch Arztebl Int.* 2016;113(25):423-430. doi:10.3238/arztebl.2016.0423.

ปัจจัยที่สัมพันธ์กับการปฏิบัติตามแนวทางการรักษาของผู้ป่วยภาวะหัวใจล้มเหลว

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บทนำ: การปฏิบัติตามแนวทางการรักษาของผู้ป่วยภาวะหัวใจล้มเหลว ไม่เพียงแต่ช่วยป้องกันการเกิดภาวะแทรกซ้อน แต่ยังช่วยส่งเสริมสุขภาพ คุณภาพชีวิต ลดอัตราการนอนโรงพยาบาลและอัตราการเสียชีวิตของผู้ป่วย

วัตถุประสงค์: เพื่อศึกษาความสัมพันธ์ระหว่างปัจจัยที่เกี่ยวข้องกับการปฏิบัติตามแนวทางการรักษาของผู้ป่วยที่มีภาวะหัวใจล้มเหลว

วิธีการศึกษา: การศึกษาเชิงพรรณนา ณ จุดเวลาใดเวลาหนึ่ง กลุ่มตัวอย่างผู้ป่วยจำนวน 112 คน ถูกสุ่มจากแผนกหัวใจและหลอดเลือด โรงพยาบาลซี ประเทศเวียดนาม เก็บข้อมูลระหว่างเดือนมิถุนายนถึงเดือนสิงหาคม พ.ศ. 2562 โดยใช้แบบประเมิน 4 ชนิด ได้แก่ 1) Demographic and clinical information; 2) The Revised Heart Failure Compliance Scale; 3) Mini Mental State Examination (MMSE); และ 4) The Japanese Heart Failure Knowledge Scale (JHFKS) การวิเคราะห์ข้อมูลใช้สถิติ Chi-square test และ Spearman rank correlation

ผลการศึกษา: กลุ่มตัวอย่างผู้ป่วยร้อยละ 54.5 ปฏิบัติตามแนวทางการรักษา โดยมีการใช้ยาและตรวจร่างกายอย่างสม่ำเสมอ (มากกว่าร้อยละ 80) ขณะที่การออกกำลังกาย การจำกัดน้ำและการชั่งน้ำหนักทุกวัน มีการปฏิบัติอย่างไม่สม่ำเสมอ (ร้อยละ 43.8 ร้อยละ 33.8 และร้อยละ 16.1 ตามลำดับ) ปัจจัยที่มีความสัมพันธ์ต่อการปฏิบัติตามแนวทางการรักษาของผู้ป่วย ได้แก่ อายุ ระดับการศึกษา ระยะเวลาการนอนโรงพยาบาล โรคประจำตัว ความรู้เกี่ยวกับภาวะหัวใจล้มเหลว และการรับรู้ ($P < .05$)

สรุป: ผู้ป่วยควรได้รับการเพิ่มพูนความรู้เกี่ยวกับภาวะหัวใจล้มเหลวเพื่อเพิ่มการปฏิบัติตามแนวทางการรักษา และผู้ให้บริการดูแลสุขภาพควรให้ข้อมูลและความรู้เพิ่มเติมเกี่ยวกับภาวะหัวใจล้มเหลวแก่ผู้ป่วยเมื่ออยู่ในโรงพยาบาล

คำสำคัญ: การรักษา ภาวะหัวใจล้มเหลว การรับรู้

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