



Extra Analysis of Health Care Policy for Patients with Corona Virus during COVID 19 and with Chronic Heart Failures and Roles of Nurses at Hospitals in Vietnam

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

The study aims to provide knowledge of self-care for patients with COVID 19 and with heart failures. In the United States, between 2011 and 2014, an estimated 6.5 million Americans over the age of 20 had chronic heart failure The estimated prevalence of heart failure in Asia ranges from 1.26% to 6.7%, in Southeast Asian countries from 4.5% to 6.7%. This study used Health education intervention that was carried out for 90 patients with chronic heart failure inpatient treatment at Cardiology Department - Nam Dinh General Hospital.

The rate of heart failure in Korea was estimated at 1.53% in 2013. The frequency of heart failure in

Korea is expected to double, from 1.60% in 2015 to 3.35% in 2040. By 2040, more than 1.7 million Koreans are expected to have heart failure. In Japan, an estimated 1.0 million patients have heart failure and the number of outpatients with left ventricular dysfunction is expected to gradually increase to 1.3 million by 2030. In China, 4.2 million people suffer from heart failure and 500,000 new cases are diagnosed each year). We perform method of one-group intervention study with before-after comparison. Health education intervention was carried out in 90 patients with chronic heart failure inpatient treatment at Cardiology Department - Nam Dinh General Hospital. Our results show that patients with cardiovascular disease need to be aware that they are a very high risk group for infection as well as serious complications that may occur if they are unfortunately infected with COVID-19. This research finding and recommended healthy foods to support for better health of patients with chronic heart failure in many developing countries. Last but not least, vital roles of nurses in Nam Dinh and Vietnam hospitals have been increasing in recent years in helping patients and help them to gain knowledge for self-care with COVID 19 and with heart failures and practice "Maintenance of care" of patients with chronic heart failure.

Keywords: COVID 19 effects; treatment; Nam Dinh Hospital; patients; heart failure; healthcare.

1. INTRODUCTION

Heart failure is a condition in which the heart muscle is no longer able to pump enough blood to various organs in the body. This is the end result of heart disease, artery disease, systemic diseases [1].

According to statistics of WHO (World Health Organization): The death rate from COVID-19 in people with cardiovascular disease accounts for more than 10%, followed by diabetes is greater than 7%. The remaining number at the top of the list are people with chronic respiratory diseases, while the average person is 0.9%. That shows that the risk of dying from COVID-19 in people with cardiovascular disease is the highest and 10 times higher than the general population.

The reason for the high mortality of cardiovascular patients with COVID-19 is because when the SARS-CoV-2 virus enters the body, it will trigger underlying heart disease and cause a severe inflammatory response in the blood vessels and heart muscle that leads to heart failure (Ngoc, P.T.B., Nhung, P.T.H., Huy, D.T.N., 2021), heart attack, arrhythmia, acute coronary syndrome, acute heart failure. In addition, heart function has weakened, patients who are already short of breath, tired because of existing cardiovascular disease, now have even more difficulty breathing because COVID-19 causes acute pneumonia syndrome, making them not strong enough to fight back (source: vientimmach.vn, access date 14/8/2021).. If infected with the SARS-CoV-2 virus, their disease will be more severe, the ability to recover is also difficult compared to the average person.

(Source: vientimmach.vn, access date 14/8/2021)

2. LITERATURE REVIEW

Ngoc, et al. (2020) mentioned Two factors on the demographic characteristics of the subjects related to knowledge are age group and working seniority. The older the better, the better the knowledge and the more experienced 10-20 year olds have higher knowledge than the other groups [2].

Two factors that belong to the professional characteristics of nursing are updating knowledge and knowledge-related training needs. Those in need of training have knowledge is lower than those who have no need; those who have participated in the episode Trainers have lower knowledge than non-participants.

Working years and training needs are related to practice knowledge of Nurses' heart failure prevention. The higher the seniority, the better the practice, and the better Nurses with successful practice have higher training needs than nurses with poor practice.

According to a study comparing self-care behaviors in heart failure patients in 15 countries around the world (2013), there were 5964 patients participating in the study, and 126 heart failure patients in Vietnam. The results show that: Vietnam has 10% reported not using drugs as prescribed, but it is one of the three countries with the lowest percentage of patients who do not follow a salt-restricted diet (with 22%). More than 50% of patients worldwide do not exercise regularly, Vietnam is reported to have more than 40% of patients do not exercise regularly [3].

A study in Jordan (2017) showed that the average knowledge score of the patients was relatively low. Self-care is measured by the SCHFI scale with a score of 70 points or more is considered self-care ability, results: the average self-care scales are all lower than the cutoff point of 70 points, most the number of participants is below 70 points on all three scales, specifically: 66% of heart failure patients have a score of maintenance of care less than 70 points; 70% of patients with heart failure had a score on care management less than 70 points and 77% of people with heart failure had a confidence score of less than 70 points. That suggests that self-care behavior is not enough [4].

In a study of 202 patients (2005) in 3 US hospitals, adherence to recommended self-care strategies was poor: only 14% of patients weighed themselves daily, 9% of patients reported in the follow-up of symptoms, 31% could not recognize any aggravation of symptoms and only 34% of patients took all prescription drugs. Regarding adherence to the sodium-restricted diet, 20% of patients reported that they did not receive instructions from their physician to follow a sodium-restricted diet. Of the 80% who received instructions, 55% did not follow a sodium-restricted diet and could not calculate the sodium content of the food [5].

Another study of heart failure patients in developed and developing countries (2009) found that self-care was poor in all four countries: USA, Australia, Thailand and Mexico: Highest retention score in sample in Australia (73.35 ± 1.14 points) and the lowest in the sample in Mexico (57.8 ± 13.5 points). The highest score for care management was in the United States (68.2 ± 17.7 points), the lowest in Thailand (44.43 ± 1.81 points). Self-care confidence score was higher in Mexico (77.0 ± 19.1 points), lowest in Thailand (54.93 ± 1.78 points). However, as self-care was considered to be achieved when the score was 70 or higher, self-care was also inadequate in most groups [6].

A cross-sectional descriptive study performed on 116 outpatients in Brazil (2013) showed that the rate of patients achieving maintenance care was 6.9%; management of care is 14.7% and confidence is 19%, and the average self-care scores are mostly below 70 points (Conceicao et al, 2015).

In Vietnam, there are not many studies on this issue.

In a cross-sectional descriptive study by Kieu, [7] at the Cardiology Department, Bach Mai Hospital, up to half of patients who had been hospitalized for heart failure had low self-care scores. In which, poor self-care related to drug non-compliance is 37.5% and not correct implementation of salt-reduced diet is 52.5% [7].

3. METHODOLOGY AND DATA

For research approach, this study mainly uses a combination of quantitative methods and qualitative methods, including synthesis, inductive and explanatory methods.

One-group intervention study design with before-after comparison. Health education intervention was carried out for 90 patients with chronic heart failure inpatient treatment at Cardiology Department - Nam Dinh General Hospital. Using a toolkit to measure self-care knowledge and practice in chronic heart failure to collect data from January to April 2018.

4. MAIN RESULTS

4.1 Overall Analysis of Heart Failures Disease in the World and Vietnam

4.1.1 Situation of heart failure in the world

Heart failure situation in Vietnam

Non-infection diseases are increasing rapidly in Vietnam, including heart failure. Non-infectious diseases mortality in total deaths has increased from 56% (in 1990) to 72% (in 2010). In which, cardiovascular disease accounted for 30% of total deaths, cancer accounted for 21%, chronic respiratory disease 6%, diabetes accounted for 3%, mental and neurological diseases accounted for 2%. (source: Ministry of Health of Vietnam 2015. Strengthening prevention and control of non-communicable diseases, General report of health sector 2014, Medicine Publishing House, Hanoi).

Through the study of disease patterns in inpatients treated at the Vietnam Heart Institute during the period from 2003 to 2007, heart failure was one of the five most hospitalized cardiovascular disease groups (accounting for 19.8% of the total hospitalization rate) [8].

4.1.2 Patients Self-care assessment

- Knowledge of some self-treatment methods of patients participating in the study before and after the intervention.

Table 1 describes the patient's correct knowledge of some self-treatment methods:

Before the intervention, the majority of patients had correct knowledge about some self-treatment methods such as limiting salt intake, not smoking, not drinking alcohol daily, knowing when to go to the doctor or call for help. Counseling is "Beneficial" for patients with chronic heart failure. However, only a few patients (28.9%) have correct knowledge about "Limit drinking a lot of water", the proportion of patients with correct knowledge about "Don't give up heart failure medication when feeling better" is also true. Accounted for only 55.6% and also only nearly half of patients (41.1%) fully selected all 3 answers when experiencing edema/difficulty breathing, sudden weight gain, they should go to the doctor or call a health worker to advice.

Immediately after the intervention and 1 month after the intervention, the patient's knowledge improved with all patients having the correct

knowledge about limiting salt intake, limiting fluids, and not smoking. Most patients have the right knowledge about not drinking alcohol daily, not quitting smoking and knowing when to go to the doctor or call for advice. And also old people have to obtain self care knowledge [9].

4.1.3 Research results according to each practice content

As mentioned in the section General information about the study subjects out of 90 patients participating in the study, 81 patients had been inpatient treatment for heart failure before participating in the study. Therefore, before the intervention, we only recorded the experiences of self-care practices of these 81 patients, and 9 patients because it was the first time they were hospitalized for heart failure, so we did not evaluate the practice on these patients. these 9 patients.

Practice "Maintenance of care" of patients with chronic heart failure participating in the study before and after the intervention

Table 1. Correct knowledge of some self-treatment methods of study participants (n=90)

Content	Evaluation time					
	T1		T2		T3	
	Patients	Ratio %	Patients	Ratio %	Patients	Ratio %
Limit salt	86	95,6	90	100,0	90	100,0
Limit drink lot of water	26	28,9	90	100,0	90	100,0
No smoking	84	93,3	90	100,0	90	100,0
No alcohol daily	73	81,1	90	100,0	89	98,9
Not give up heart failure medicine when you fell better	50	55,6	89	98,9	79	87,8
Knowwhen you call doctor if you have syptoms	88	97,8	90	100,0	89	98,9
See a doctor if you have edema breathing or gain weight suddently	37	41,1	84	93,3	73	81,1

(Source: Authors estimationfrom survey)

Table 2. Results of the "Maintenance of Care" practice of patients participating in the study before and 1 month after the intervention

Maintenance care		Evaluation time			
		T1 (n=81)		T3 (n=90)	
		Patients	Ratio %	Patients	Ratio %
Monitor weighte	None or rarely	42	51,9	18	20,0
	Sometimes	21	25,9	55	61,1
	Frequently	16	19,8	10	11,1
	Daily	2	2,4	7	7,8
Monitor vacuum edema	None or rarely	40	49,5	16	17,8
	Sometimes	21	25,9	34	37,8
	Frequently	7	8,6	22	24,4
	Daily	13	16,0	18	20,0
Disease prevention	None or rarely	37	45,7	17	18,9
	Sometimes	30	37,0	47	52,2
	Frequently	10	12,3	16	17,8
	Always	4	5,0	10	11,1
Work physical	None or rarely	6	7,4	2	2,2
	Sometimes	25	30,9	16	17,8
	Frequently	33	40,7	56	62,2
	Daily	17	21,0	16	17,8
Periodic examination	None or rarely	12	14,8	0	0
	Sometimes	25	30,9	39	43,3
	Frequently	29	35,8	36	40,0
	Always	15	18,5	15	16,7
Eating regime less salt	None or rarely	17	21,0	8	8,9
	Sometimes	34	42,0	31	34,4
	Frequently	21	25,9	31	34,4
	Daily	9	11,0	20	22,2
Do exercises 30 min	None or rarely	2	2,4	0	0,0
	Sometimes	25	30,9	19	21,1
	Frequently	37	45,7	55	61,1
	Daily	17	21,0	16	17,8
Forgot to take 1 pill from the daily prescription	None or rarely	14	17,3	38	42,2
	Sometimes	43	53,1	35	38,9
	Frequently	23	28,4	17	18,9
	Daily	1	1,2	0	0
Note to reduce salt when eating at restaurants	None or rarely	43	53,1	24	26,7
	Sometimes	19	23,5	41	45,6
	Frequently	11	13,6	9	10,0
	Always	8	9,8	16	17,7
There are reminders to take medicine	None or rarely	34	42,0	18	20,0
	Sometimes	25	30,9	36	40,0
	Frequently	16	19,8	24	26,7
	Daily	6	7,3	12	13,3

(source: Nhung, P.T.H estimation, Master thesis, 2018)

The results of the "Maintenance of Care" practice of the patients participating in the study before and 1 month after the intervention are shown in Table.

Before the intervention, more than half of the patients did not or rarely monitored their weight (accounting for 51.9%) after the intervention, this rate decreased to 20%; the proportion of patients

who did not or rarely monitored edema before the intervention accounted for 49.5%, after the intervention decreased to 17.8%; only 17.3% of patients before the intervention did not or rarely forgot to take their daily prescription, after the intervention this rate was significantly improved to 42.2%; Before the intervention, 53.1% of patients did not or rarely asked for less salt when eating out, after 1 month of intervention, this rate

was halved to only 26.7%; The percentage of patients who regularly and daily use reminders to remember to take their daily prescription drugs has increased from 27.1% to 40%.

4.2 Analysis of Covid 19 effects for Patients with Chronic Heart Failures

First, Statistics show that COVID-19 will increase the mortality rate in people with cardiovascular disease 10 times compared to people without a history of cardiovascular disease. This number makes people with cardiovascular disease, arrhythmia become anxious. So what should the patient do to avoid viral infection and maintain a stable heart rate? All will be in the following article.

COVID-19 infection aggravates cardiac arrhythmias in patients with cardiovascular disease

According to a report in the American Medical Journal, through a study of the records of 138 patients hospitalized with COVID-19 infection, nearly 17% of people had arrhythmias and more than 7% had acute heart damage, including: including: cardiac arrest, myocardial infarction, acute heart failure and myocarditis.

In particular, about 70% of cardiovascular patients with myocardial damage due to SARS-CoV-2 virus have died. That shows how dangerous the impact of COVID-19 on people with heart disease and arrhythmias can be.

According to medical experts, the above complications may occur because the SARS-CoV-2 virus suppresses the immune system, increasing the risk of infection. This reduces the oxygen level in the blood and causes cardiac arrhythmias. The appearance of a "foreign" virus in the body also stimulates immune responses that create false alarms, activate autonomic nerve activity, increase blood pressure, increase heart rate.

(source: vientimmach.vn, access date 14/8/2021).

4.3 Further Analysis of Treatment Solutions for Patients with Covid 19 and with Heart Failures

First, Taking medication as prescribed by your doctor is the best way to protect your heart and fight the complications of COVID-19 if you do get sick. Even if your symptoms have subsided, you

should not reduce the dose or quit on your own because that can cause your heart rate to rise again.

Because the epidemic may still last for a long time, it is necessary to store enough medicine for a few months. Please check all your prescriptions, contact your doctor to get a prescription for a 2-3 month supply.

Then, second, Keep blood pressure and blood fat within target limits Keeping your blood pressure within your target range will help you better stabilize your heart rate. In case you are taking statins - continue taking them and stop only with your doctor's approval. Many reports show that the use of this group of drugs in patients with coronary artery disease and dyslipidemia can better reduce cardiovascular risks during the COVID-19 epidemic season.

Third, take fever-reducing medicine when the fever is over 38.5 degrees.

Regardless of whether you have a fever due to the SARS-CoV-2 virus or a fever from other causes, you need to take fever-reducing medicine (preferably Paracetamol) to lower your body temperature. Because when high fever or infection can cause arrhythmia in people with pre-existing cardiovascular disease, dangerous for the patient.

Fourth, listen to your body to recognize abnormal signs of COVID-19 early

Not everyone infected with COVID-19 also has a fever, cough, and difficulty breathing because it depends on the patient's resistance and medical condition. Especially in the symptoms of infection in patients with cardiac arrhythmias, the cardiovascular system is sometimes masked by underlying diseases.

(source: vientimmach.vn, access date 14/8/2021)

4.4 Other Treatment Solutions for Patients with Covid 19

Stay at home: Most people with COVID-19 have a mild illness and can recover at home without medical care. Do not leave your home, except when you need medical attention. Do not go to public areas.

Take care of yourself. Rest and drink water regularly. Take over-the-counter medicines, such as acetaminophen, to help you feel better.

Stay in touch with your doctor. Call before visiting the doctor. Get medical attention if you have trouble breathing, or have emergency warning signs, or if you think it is an emergency.

Avoid using public transport, carpooling or taxis.

Monitor your symptoms

Symptoms of COVID-19 include fever, cough, or other symptoms.

Follow care instructions from your healthcare provider and local health department. Your local health authority will provide instructions on how to check your symptoms and report information.

In fact, several good examples in Vietnam have showed if patients apply better above actions together with self-care treatment (suitably) at home with nutrition rich in vitamin with salt water and medicine, they can beat corona viruses.

- 1. Stay home** except to get medical care.


- 2. Monitor your symptoms** carefully. If your symptoms get worse, call your healthcare provider immediately.


- 3. Get rest and stay hydrated.**


- 4.** If you have a medical appointment, **call the healthcare provider** ahead of time and tell them that you have or may have COVID-19.


- 5.** For medical emergencies, call 911 and **notify the dispatch personnel** that you have or may have COVID-19.


- 6. Cover your cough and sneezes** with a tissue or use the inside of your elbow.


- 7. Wash your hands often** with soap and water for at least 20 seconds or clean your hands with an alcohol-based hand sanitizer that contains at least 60% alcohol.


- 8.** As much as possible, **stay** in a specific room and **away from other people** in your home. Also, you should use a separate bathroom, if available. If you need to be around other people in or outside of the home, wear a mask.


- 9. Avoid sharing personal items** with other people in your household, like dishes, towels, and bedding.


- 10. Clean all surfaces** that are touched often, like counters, tabletops, and doorknobs. Use household cleaning sprays or wipes according to the label instructions.



Fig. 1. What you do if possible or confirmed Covid 19
(source: vietnamese.cdc.gov, access date 14/8/2021)

5. DISCUSSION AND FURTHER RESEARCHES

5.1 For Patients with Heart Failures

Patients with cardiovascular disease need to be aware that they are a very high risk group for infection as well as serious complications that may occur if they are unfortunately infected with COVID-19. Cardiovascular patients are often diseases that need long-term monitoring and long-term medication. Some medications for cardiovascular disease require periodic monitoring and testing and may interact with or be affected by other medications. In addition, some symptoms of cardiovascular disease are also easily confused with symptoms of COVID-19 infection such as shortness of breath, chest pain, etc.

People with cardiovascular disease should see a doctor and use drugs as prescribed by a doctor to avoid acute cardiovascular complications.

However, cardiovascular patients and their loved ones should be alert, not bewildered and should know how to self-monitor the progression of the disease.

Moreover, Ngoc, P.T.B et al.,(2021) mentioned that In nutrition and food policy for patients with heart failures, we need to reduce natri in food and increase fiber-rich food such as whole grain and bean, etc.

Moreover, Fat or lipid is a major culprit in atherosclerosis and increased heart events. So you need to minimize the amount of fat in your daily diet, specifically limit fatty meats, red meat, lean meat and fish should be eaten; Prioritize dishes prepared by steaming, boiling, instead of frying, stir-frying, frying Drinking the right amount of water every day will be good for people with heart failure

Also, in the US doctors promote self-care for heart failures [10-16]. And Effectiveness of self-management interventions on mortality, hospital readmissions, chronic heart failure hospitalization rate and quality of life mentioned [17-20]. Heart failure in Southeast Asia is also mentioned [21] and nurses need lots of practices [22]. Whereas Trends in heart failure incidence and survival in a community-based population stated [23].

6. CONCLUSION AND POLICY SUGGESTION

6.1 Via Our Study We Realize That

Even though patients are experienced and have been counseled about their illness and care, making appropriate self-care decisions is not easy. Research results help confirm that patient education needs to be persistent and conducted regularly as a long-term, sustainable strategy.

In summary, health education for patients in general, including education to improve self-care for patients with chronic heart failure in particular, plays an important role and is one of the nurses' duties in caregiving. Take care of patients in the hospital. Nurses should give direct health education in small groups to patients to help chronic heart failure patients understand and apply self-care skills that have been taught to them. Healthcare is more effective when the patient is in a stable condition and has adapted to live with heart failure. Therefore, it is advisable to conduct health education for patients after 48 hours of admission and during the next hospital stay. Furthermore, the latest guidelines on heart failure management from the American Heart Association recognize the importance of education and recommend that patients receive educational materials as part of their guidelines for hospital discharge. patient.

6.2 Next, Solutions for Enhancing Knowledge of Nurses at Hospitals for Better Treatment of Covid 19 and Heart Failures

Here, we emphasizes the roles of nurses are important in treatment solutions and there are many factors affecting nurses capacity. For instance, Theoretically, the more working time, the more opportunities to participate in continuing education programs related to public professional work more. Another reason is the theory of "self-maturation" when people have If you have background knowledge on a certain subject, this knowledge can be extended through the working process. In addition, age and occupation are two variables with positive linear relationship. Therefore, seniority of work is related to expertise is completely understandable. However, as mentioned above human knowledge in late adulthood tends to decrease, besides that knowledge also depends on the level of education. Vu Thanh Binh, Dinh Tran Ngoc Huy,

Pham Thi Bich Ngoc, Pham Thi Hong Nhung, Dinh Tran Ngoc Hien, & Ngo Huy Hoang. (2021) stated that WHO and Japan also have other approaches of corona cure and authors suggest treatment of heart failures attached for patients and self-care knowledge for these patients [24]. And Pham Thi Bich Ngoc, Dinh Tran Ngoc Huy, Pham Thi Hong Nhung (2021) mentioned provide knowledge of healthy food to serve for better health of patients through analyzing the current status of self-care knowledge and practice of patients with chronic heart failure at the Department of Cardiology - Nam Dinh General Hospital in 2018 [25] and hospitals need to care effective treatment for patients [26-27]. Then laborers also need to improve skills [28].

On the other hand, the ability to retain knowledge depends on many factors, in which learning method plays an important role, learners can remember 75% of the knowledge learned if the knowledge is applied in practice and remember 90% if that knowledge is taught to others. Due to the need for the job to have the knowledge to perform the task and or the person nurses are aware of the importance of the problem, so they self-study and equip themselves with knowledge about falls through different channels without having to attend exercise classes which training. With the development of information technology today, the search for Documentation of covid 19 and heart failure is not too difficult. Huy DTN, Nhan VK, Bich NTN, Hong NTP, Chung NT, Huy PQ stated real estate sector can support better facilities for the industry [29].

Beside, Employee motivation and performance can be affected, influenced by their detailed knowledge. Knowledge and practice are two closely related factors. And Huy DTN, Dat PM, & Anh PT [30] stated banks can participate to sponsor or finance [31] for heart failures and covid aid programs and also by [32-35].

7. LIMITATION OF RESEARCH

We can expand our research model to other diseases and markets.

DISCLAIMER

The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not

intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

CONSENT AND ETHICAL APPROVAL

As per international standard or university standard guideline patients consent and ethical approval has been collected and preserved by the authors.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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