

### **A10: Maintaining Water Balance: A Principal Mechanism in Controlling Symptoms associated with Heart Failure**

Piyatida Junlapeeya<sup>1</sup> Ph.D., RN, Thaworn Lorga<sup>1</sup> Ph.D., RN, Jariya Ratanaporn<sup>2</sup>, Kwannapa Jaikla<sup>2</sup>, Jutamas Katamas<sup>2</sup>, Ichaya Tonapo<sup>2</sup>, Supatchaya Janpaung<sup>2</sup>, Anchalee Srirapa<sup>2</sup>, Reutairat Akaraserisakul<sup>2</sup>

<sup>1</sup> Instructor, Boromarajonani College of Nursing, Nakhon Lampang

<sup>2</sup> Students, Boromarajonani College of Nursing, Nakhon Lampang

E-mail: pjunlapeeya@gmail.com

**Background:** The rising number of people living with heart failure in Thailand and Lampang province is evident. Heart failure limits the activity of daily living; therefore support from family members is vital. The dependence to family members caused by tiredness could result in stress and low self-esteem. Understanding the experiences of persons living with heart failure will broaden the perspective of healthcare personnel in providing quality care for them and their caregivers.

**Purpose:** This descriptive qualitative study was proposed to describe the experience of persons living with heart failure.

**Methods:** Nine persons living with heart failure were purposively recruited from one sub-district of Lampang province, Thailand. Data were collected using individual in-depth interviews and analyzed using constant comparative analysis.

**Results:** The persons living with heart failure were 58 to 80 years old. They categorized the experience of living with heart failure into 2 groups; 1) heart failure is a functional limiting condition and 2) mechanism in controlling symptoms associated with heart failure includes prevention of volume overload and tiredness, assessment of signs and symptoms of volume overload and tiredness, management of those signs and symptoms by limiting food and water intake, reducing physical exertion, taking prescribed medication, and visiting physician when getting worse. The family members and healthcare personnel play important role in the process of controlling the symptoms associated with heart failure.

**Conclusion and Recommendations:** The results revealed that older persons explained heart failure as a functional limiting condition. A principal mechanism in controlling symptoms associated with heart failure is maintaining water balance. However, exercise which is an important part of keeping the condition under control seemed to be absent. Recommendations could be made for healthcare personnel to have a definite yet safe and practical guideline to care for older person living with heart failure and their caregivers.

**Keywords:** heart failure, older person, water balance

## BACKGROUND

Heart failure is a major cause of death in patients with heart disease. The rising number of people living with heart failure in Thailand and particularly in Lampang province is evident. The American Heart Association (AHA) revealed the statistics of the United States that there are 5.1 million incidences of heart failure patients in the population over 20 years in 2007 - 2010 (Go et al., 2014). In Thailand, there are deaths of 54,530 cardiovascular patients in the year 2013 (Bureau of Non-Communicable Diseases Department of Disease Control, 2016). In addition, the Statistic in the north of Thailand showed that the rate of cardiovascular disease in 2009 was 302.40 per hundred thousand populations (Bureau of Non-Communicable Diseases Department of Disease Control, 2016). From the data of patients admitted in Lampang Hospital, there were 355, 342 and 395 people with heart failure in 2012-2014, respectively (Lampang Hospital, 2014). The mortality rate of heart failure patients in Mueang District, Lampang Province in 2012-2014 is 118, 114 and 206 persons respectively (Lampang Provincial Health Office, 2014).

Heart failure is a condition in which the heart is unable to function properly, affecting the lives of the persons, both physically, mentally, emotionally, socially and economically, and affecting their families and the nation (Tangvichitsakul, 2007). The symptoms that mostly impact the people with heart failure is shortness of breath and physical intolerance. Therefore, support from family members is vital. The dependence to family members caused by tiredness could result in roles and duties limitation and lead to stress and low self-esteem of the patients. The families have to bear the burden of treatment for patients who affect their economy and society as well (Supawong, 2004). If the family has improper adaptation, it may affect the relationship between the patient and the family members. Despite the advancement in technology and medications used to treat heart failure, the number of patients has increased steadily. This suggests that in addition to medical treatment, patients and family members also need self-management skills to suit the conditions they are facing so they can prevent and reduce the severity of heart failure. Understanding the experiences of persons living with heart failure will broaden the perspective of healthcare personnel in providing quality care for them and their caregivers.

## OBJECTIVE

This descriptive qualitative study was proposed to describe the experience of persons living with heart failure.

## METHODS

The ethical approval was given by Boromarajonani College of Nursing Nakhon Lampang and a written informed consent was obtained from the participants of the study.

The participants of the study were nine persons diagnosed with heart failure who were purposively recruited from one sub district of Lampang province, Thailand.

A semi-structured, in-depth interview was used for data collection. Each interview took approximately 45-60 minutes and each participant was interviewed once or twice. The data collection was terminated when the data saturation was achieved. The researchers were trained for an in-depth interview and follow the data collection method to reduce discrepancies among them.

The researchers coordinated with the director of the Health Promotion Hospital for the contact information of patients with heart failure. The researchers met the participants to explain the study objective and the rights to participate or withdraw from the study which will not affect the healthcare services they receive. The participants who voluntarily participate in the study selected preferable dates and times of the interviews. After each interview, the researchers summarized the information of the interview to confirm the understanding between the interviewer and the participant. Verbatim transcription of the data was conducted by the researchers. Data analysis was done using constant comparative analysis method.

## RESULTS

The persons living with heart failure were 58 to 80 years old. They categorized the experience of living with heart failure into 2 groups; 1) heart failure is a functional limiting condition and 2) mechanism in controlling symptoms associated with heart failure includes prevention of volume overload and tiredness, assessment of signs and symptoms of volume overload and tiredness, management of those signs and symptoms by limiting food and water intake, reducing physical exertion, taking prescribed medication, and visiting physician when getting worse. The family members and healthcare personnel play an important role in the process of controlling the symptoms associated with heart failure.

### 1. Heart failure is a functional limiting condition

The participants indicated that after having heart disease, it is necessary to reduce or stop doing many activities as previously done to prevent tiredness:

"I used to exercise by aerobic dance. It's fast and made me tired easily. So, I have to change to Thai traditional dance." (Female, Age 74)

"Previously, I had worked a little but now it makes me tired .... I can't work at all." (Female, Age 74)

"Now I don't work, not at all. I cannot do anything, not doing laundry or dish washing. They make me tired." (Female, Age 63)

"I previously worked hard. Working as farmer was tiring. Now I am trying to reduce my work since I have heart disease, I cannot work as farmer anymore." (Female, Age 61)

2. Mechanism in controlling symptoms associated with heart failure includes prevention of volume overload and tiredness, assessment of signs and symptoms of volume overload and tiredness, management of those signs and symptoms by limiting food and water intake, reducing physical exertion, taking prescribed medication, and visiting physician when getting worse. The family members and healthcare personnel play an important role in the process of controlling the symptoms associated with heart failure.

### 2.1 Prevention of volume overload and tiredness

Participants or their family members are being careful about and control their eating and water drinking habits to prevent excess water and tiredness:

"Need to be careful of swelling. For example, about food, I reduce salty taste, eat bland, try to add a little salt when cooking, about a pinch. Try to put small amount of pickled fish, like half a spoon, then tasting it, if it is too bland, then I add more." (Female, Age 61)

"Do not eat fish sauce at all. Do not eat fish sauce, soy sauce. Eat vegetables often. This is because I am fear of swelling and I will be tired." (Male, Age 70)

"My daughter told me to drink a small bottle of water a day (500 cc) because the water would overflow the kidneys causing swelling." (Female, Age 80)

"Drink less than 1 liter of water per day because it will cause swelling." (Female, Age 74<sub>1</sub>)

"I used to have shortness of breath when I was sleeping, now I use 3 pillows when I go to bed so that I won't be tired at night." (Female, Age 74<sub>1</sub>)

"The doctor once said that don't drink much water. It will flood the lungs." (Female, Age 74<sub>2</sub>)

"When I am tired I will not work very hard. If I am tired, I will rest a lot." (Female, Age 63)

"A person with heart disease must not work hard because the mechanism of the heart will be broken." (Female, Age 61)

## 2.2. Assessment of signs and symptoms of volume overload and tiredness

The participants assessed the signs and symptoms that indicate excessive water intake and their tiredness:

"Drinking a lot will cause swelling. I know it's swollen from pressing the skin and it's dimpled." (Female, Age 80)

"We can see the swelling at the back of the foot. If pressed and it does not collapse or bounce, showing that it is not swollen" (Female, Age 58)

"You need to observe if it's swollen it will be seen." (Female, Age 74<sub>1</sub>)

"During the past month I had been coughing. That made me tired." (Female, Age 64)

## 2.3 Management of those signs and symptoms by limiting food and water intake, reducing physical exertion, taking prescribed medication, and visiting physician when getting worse. The family members and healthcare personnel play important role in the process of controlling symptoms associated with heart failure.

Participants and their family members manage signs and symptoms associated with heart failure by limiting food and water intake, reducing physical exertion, taking prescribed medication, and visiting physician when getting worse. The family members and healthcare personnel play an important role in this process:

"When I ran out of medication I would be tired. The doctor did not want me to take sublingual medicine too much. That made me tired and got admitted to the hospital.

Last year I was admitted because I had eaten all the pills and ran out of them before the time." (Female, Age 74)

"Since I have had high blood pressure the doctor has prescribed the medicine for me. I then took the medicine as the doctor ordered all the time. I go to see him every 3 months. At night I take one pill to lower my fat, in the morning I take one pill to lower my blood pressure." (Female, Age 61)

"I have always been taking medication. If I forgot to take medicine, I would skip it for that day and take it in the next day... I never forget to take medicine, I need to remember, when it's time I will take it" (Female, Age 61)

"If I felt abnormality in my heart, I would put the medicine under my tongue. If the first tablet did not help, then I will take the second tablet, if it didn't help, then I would take the third tablet. If I didn't feel better, I would go to the hospital. You will know that the symptoms improve or not by listening to your heart. If the sound of my heart improves, my condition improves." (Male, Age 70)

"I got up and sat down often when I have shortness of breath." (female, Age 74<sub>2</sub>)

"The doctor in this area cannot give me an injection. If I feel abnormal I would go to the hospital. If I go to the health promotion hospital, I will be dead. Because the doctor who treats me said that if I go there, the medical instruments were not ready, If I went there I would be dead ... My daughter always organizes the medicines and cook food for me." (Female, Age 74<sub>2</sub>)

"When I got sick, I would take one sublingual pill. If the condition did not improve, I would take another pill. If not better, I would go see the doctor. While traveling to the hospital, I would also take the third pill." (Female, Age 74<sub>1</sub>)

"My daughter prepares medicine for me every day. I can't remember doing it myself." (Female, Age 74<sub>1</sub>)

"The doctor suggested that if I was tired, if I could not fully breath, I need to take a deep breath and sit and rest." (Female, Age 74<sub>2</sub>)

"If I cough a little, I will take a rest to get better. If I breathe heavily I would go to the hospital to get help." (Female, Age 80)

"The healthcare staff at the health promotion hospital recommend me not to eat salty and spicy food because it will raising my blood pressure... If my child cooks she would give me my portion before adding more seasoning... If I have an unusual condition, I will let my child take me to the doctor, but I had to wait for her to come back from work in the evening." (Female, Age 63)

"My daughter teaches me and helps me to observe and test for the swelling at the back of my feet." (Male, Age 80)

"My wife cooks for me." (Male, Age 70)

## DISCUSSION

The results revealed that older persons explained heart failure as a functional limiting condition. A principal mechanism in controlling symptoms associated with heart failure is maintaining water balance.

The participants experience tiredness that causes them to reduce or abstain from activities that they used to do before the illness. This finding is congruent with the study of Suwannaramee, Pinyopasakul, Charoenkitkarn, & Dumavibhat (2012) that found the symptom that is common in patients with congestive heart failure is shortness of breath or shallow breathing. This is also in line with a study of Rotsathien, Kunsongkeit, & Duangpaeng (2013) that found the feeling of dyspnea caused by heart failure was as fatal as death.

For the control mechanism of heart failure, it was found that the participants prevent abnormal symptoms by restricting water and food, not drinking much water and reducing eating salty food, reducing exertion to prevent tiredness, assessing excess water in the body, i.e. swelling and shortness of breath. When there are such symptoms, they will be handled by resting or stopping activities and taking medicine according to the doctor's treatment plan. Family members and health personnel are involved in this mechanism. This is in accordance with the study of Kumkunthod, Kumkatanakijkrilert & Pongthavornkamol (2013) that found the eating behavior of limiting sodium among heart failure patients was at a high level. The persons most influencing the behavior is the healthcare personnel, followed by the spouse or family members. Similar to the study of Reanpang (2005) that found the direct experience of illness affects how patients with heart failure live their lives. Recognizing the symptoms of the disease can increase the level of self-management. However, experience of illness among patients with heart failure regarding important issues that can keep the conditions under control such as exercise, stress management, smoking cessation, and control of blood pressure, diabetes, and cholesterol, apart from the management of water balance that reduces the workload of the heart, seem to be absent.

## RECOMMENDATIONS

Recommendations could be made for healthcare personnel to have definite yet safe and practical guideline to care for older person living with heart failure and their caregivers. Empowering family members to participate in the care is beneficial to the patients.

## ACKNOWLEDGMENT

The researchers would like to thank the participants of this study and the staff of the health promoting hospital who took part in this study.

## REFERENCES

- Bureau of Non-Communicable Diseases Department of Disease Control. (2016). *Annual Report 2015*. Bangkok: The War Veterans Organization of Thailand Publishing.
- Go, A. S. et al. (2014). AHA Statistical Update: Heart Disease and Stroke Statistics - 2014 Update: A Report from the American Heart Association. *Circulation*, 21: 1-267.
- Kumkunthod, J., Watanakijkrilert, D., & Pongthavornkamol, K. (2013). Factors Influencing Sodium Restriction Intention among Patients with Chronic Heart Failure. *Princess of Naradhiwas University Journal*, 6(3): 49-59. (in Thai).

Lampang Hospital. (2014). Admission rate of patients with heart disease. Lampang Provincial Health Office. (2014). Morality rate of patients with non-communicable diseases.

Reanpang, C. (2005). *Self-management and well-being among heart failure patients*. (Master's Thesis). Chiang Mai University. (in Thai).

Rotsathien, V., Kunsongkeit, W., & Duangpaeng, S. (2013). Experiences of Dyspnea in Patients with Heart Failure. *The Journal of Faculty of Nursing Burapha University*, 21(3): 48-59.

Supawong, U. (2004). *Health problems and needs of persons with heart failure in special medical service center of Chiang Mai University*. (Master's Thesis). Chiang Mai University. (in Thai).

Suwannaramee, W., Pinyopasakul, W., Charoenkitkarn, V. & Dumavibhat, C. (2013). Symptom Experiences, Symptom Management, and Functional Status in Patients with Heart Failure. *Thai Journal of Cardio-Thoracic Nursing*, 24(1): 14-16.

Tangvichitsakul, S. (2007). *Effect of self-management program on quality of life among heart failure patients*. (Master's Thesis). Chiang Mai University. (in Thai).