

**THE EFFECTS OF A DYSPNEA RELIEF PROGRAM ON SEVERITY
OF DYSPNEA AND KNOWLEDGE TO CONROL DYSPNEA
IN CONGESTIVE HEART FAILURE PATIENTS.**

The seal of Mahidol University is a circular emblem. It features a central blue circle containing a golden Thai-style stupa. Surrounding this is a larger yellow circle with Thai script. The outermost ring is white with more Thai script. The author's name is printed across the center of the seal.

NUTCHARAT CHATVICHAI

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Thematic paper
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Nutcharat Chatvichai

Mrs.Nutcharat Chatvichai
Candidate

P. Srimoragot

Assoc. Prof. Pongsri Srimoragot, D.N.S.
Major-Advisor

Doungrut Wattanakitkrileart

Asst. Prof. Doungrut Wattanakitkrileart ,
D.N.S.
Co-Advisor

Rassmidara Hoonsawat

Assoc.Prof.Rassmidara Hoonsawat,
Ph.D.
Dean
Faculty of Graduate Studies

Kobkul Phanchareonworakul

Assoc.Prof. Kobkul Phanchareonworakul,
Ph.D.
Chair
Master of Nursing Science
Faculty of Nursing

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for the Degree of Master of Nursing Science (Adult Nursing)

on

November 10, 2003

Nutcharat Chatvichai

Mrs.Nutcharat Chatvichai
Candidate

P. Srimoragot

Assoc. Prof. Pongsri Srimoragot, D.N.S.
Chair

Doungrut Wattanakitkrileart

Assistant Prof. Doungrut Wattanakitkrileart ,
D.N.S.
Member

Thamarath Chantadansuwan

Dr. Thamarath Chantadansuwan, M.D.
Member

Suvimol Kimpee

Assoc. Prof.Suvimol Kimpee, M.Ed.
Member

Rassmidara Hoonsawat

Assoc.Prof.Rassmidara Hoonsawat,
Ph.D.
Dean
Faculty of Graduate Studies
Mahidol University

Kobkul Phanchareonworakul

Assoc.Prof. Kobkul Phanchareonworakul,
Ph.D.
Dean
Faculty of Nursing
Mahidol University

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Nutcharat Chatvichai

THE EFFECTS OF A DYSPNEA RELIEF PROGRAM ON SEVERITY OF DYSPNEA AND KNOWLEDGE TO CONTROL DYSPNEA IN CONGESTIVE HEART FAILURE PATIENTS

NUTCHARAT CHATVICHAI 4437016 NSAN / M

M.N.S. (ADULT NURSING)

THEMATIC PAPER ADVISORS: PONGSRI SRIMORAGOT, D.N.S., DOUNGRUT WATTANAKITKRILEART, D.N.S.

ABSTRACT

The purpose of this study was to determine the effects of a dyspnea relief program on dyspnea severity symptom and dyspnea control knowledge in congestive heart failure patients. The one group pre-test and post-test design was applied for this study. This study was based on the symptom management as the conceptual framework. It was conducted on the admission day and up to 72 hours after hospitalization.

Purposive sampling was applied to recruit 20 congestive heart failure patients with dyspnea who were hospitalized at Chest Disease Institute, Nontaburi. The samples were 18 to 73 years old and twelve of them were female. The dyspnea relief program is divided into 3 phase, phase I the first 24 hours, phase II after 48 hours and phase III 72 hours. Data were collected by self-administered questionnaires from January to April, 2003. Data were analyzed by the Friedman test and Wilcoxon Signed Ranks test.

The results revealed the most severity of dyspnea was at 2-3 hours after admission. Most of samples were lack of knowledge about diet control and restriction of water intake. The severity of dyspnea at post-test was statistically significantly lower than at pre-test ($p < 0.000$). And dyspnea control knowledge of CHF patients during pre-test was statistically significant lower than post-test knowledge ($p < 0.05$). The investigator suggests this program should be applied for other congestive heart failure patients.

KEY WORDS : DYSPNEA RELIEF PROGRAMS/ SEVERITY OF DYSPNEA /
CONGESTIVE HEART FAILURE / KNOWLEDGE TO CONTROL
DYSPNEA

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ผลของการใช้โปรแกรมการบรรเทาอาการหายใจลำบากต่อระดับความรุนแรงของอาการหายใจลำบากและความรู้เพื่อควบคุมอาการหายใจลำบากในผู้ป่วยภาวะหัวใจล้มเหลว (THE EFFECTS OF A DYSPNEA RELIEF PROGRAM ON SEVERITY OF DYSPNEA AND KNOWLEDGE TO CONTROL DYSPNEA IN CONGESTIVE HEART FAILURE PATIENTS).

นุชรรัตน์ จัตรวิชัย 4437016 NSAN/M

พย.ม.(การพยาบาลผู้ใหญ่)

คณะกรรมการควบคุมสารนิพนธ์: ผ่องศรี ศรีมรกต, พย.ด., ดวงรัตน์ วัฒนกิจไกรเลิศ, พย.ด.,

บทคัดย่อ

การศึกษาครั้งนี้มีวัตถุประสงค์เพื่อศึกษา ผลของการใช้โปรแกรมการบรรเทาอาการหายใจลำบากต่อระดับความรุนแรงของอาการหายใจลำบากและความรู้เพื่อควบคุมอาการหายใจลำบากในผู้ป่วยภาวะหัวใจล้มเหลว โดยใช้แบบแผนการจัดการกับอาการของ Dodd และคณะ (2001) เป็นกรอบแนวคิดในการวิจัยเป็นการวิจัยกึ่งทดลองในกลุ่มตัวอย่างเดี่ยวที่เปรียบเทียบผลการทดลองก่อน-หลัง กลุ่มตัวอย่างคือผู้ป่วยรับใหม่ที่มิภาวะหัวใจล้มเหลวและมีอาการหายใจลำบากที่เข้ารับการรักษานในสถาบันโรคทรวงอก จังหวัดนนทบุรี จำนวน 20 ราย โดยได้รับการคัดเลือกแบบเฉพาะเจาะจงที่มีอายุ 15 ปีขึ้นไป เครื่องมือที่ใช้ในการศึกษาคือ แบบบันทึกข้อมูลส่วนบุคคล แบบสอบถามประสบการณ์การมีอาการหายใจลำบาก เครื่องมือประเมินระดับความรุนแรงของอาการหายใจลำบาก แบบประเมินการรับรู้ เครื่องมือประเมินความรู้เพื่อควบคุมอาการหายใจลำบาก และโปรแกรมการบรรเทาอาการหายใจลำบากแบ่งเป็น 3 ระยะคือ ระยะ 24 ชั่วโมงแรก, 48 ชั่วโมง, และระยะ 72 ชั่วโมง ศึกษาและเก็บรวบรวมข้อมูลระหว่างเดือนมกราคม ถึง เมษายน พ.ศ. 2546 วิเคราะห์ข้อมูลด้วยการใช้โปรแกรมการวิเคราะห์ Friedman Test และ Wilcoxon Signed Ranks Test

ผลการศึกษาพบว่า ระดับความรุนแรงของอาการหายใจลำบากมากที่สุดในระยะ 2-3 ชั่วโมง หลังเข้ารับการรักษาด่วนในโรงพยาบาล และขาดความรู้ในเรื่องการควบคุมอาหารและจำกัดน้ำดื่ม ส่วนการเปรียบเทียบค่าคะแนนเฉลี่ยระดับความรุนแรงของอาการหายใจลำบากหลังใช้โปรแกรมการบรรเทาอาการหายใจลำบากมีระดับลดลงอย่างมีนัยสำคัญทางสถิติ $p < 0.001$ และการเปรียบเทียบค่าคะแนนเฉลี่ยด้านการประเมินความรู้หลังการใช้โปรแกรมการบรรเทาอาการหายใจลำบากมีคะแนนความรู้เพิ่มขึ้นแตกต่างกันอย่างมีนัยสำคัญทางสถิติ $p < 0.05$ ผู้ศึกษาเสนอแนะให้นำโปรแกรมนี้ไปใช้ในผู้ป่วยภาวะหัวใจล้มเหลวที่มีอาการหายใจลำบากรายอื่นๆ ต่อไป

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CHAPTER I

INTRODUCTION

Background and Significance of the Study

Dyspnea is a common symptom attack in congestive heart failure patients. Dyspnea is a group of clinical manifestations occurring as a consequence of the failure of the heart to pump blood at a rate commensurate with the requirements of the body at each moment (English & Mastrean, 1995: 1). That is, cardiac output (CO) is lower than 2.5 liters / minute, normally 5 liters / minute (Porth, 1994: 467) and causes blood congestion in the circulation system and parts of the body including the lungs, which decreases the gas exchange. Patients must forcedly breathe by using intercostal muscles in breathing, discomfort during inspiration and difficulty in breathing, resulting in fatigue (Gift & Pugh, 1993: 374, Niemeyer, 1985: 421). Sometimes patients cannot explain these symptoms because their bodies had adapted themselves automatically (Robert, et al., 1993: 311). When exacerbation of dyspnea occurred, it can be life threatening without immediate treatment (Parashall & Welsh, et al., 2001: 55). With a dyspnea attack, patients suffer and are affected by physical, psychological, social, and financial impacts.

In severe and chronic heart disease, signs and symptoms of heart failure will appear. It is accepted that congestive heart failure patients had a mortality rate as high as 20 – 50% per year. In the 6th years of illness, the mortality rate of patients after congestive heart failure developed is 80% in males and 65% in females (Kannel, 1989: 1). Especially, patients who were classified based on the New York Heart Association (NYHA) classification III, IV might have a mortality rate as high as 50% within 6 months. In congestive heart failure patients with severe dyspnea, their organs will be affected, for example decreased brain perfusion causes dizziness and headache, or decreased renal blood supply causes low urine output, or hepatic congestion causes edema, both peripheral and general edema. Congestive heart failure patients aged over 65 years can be attacked by dyspnea as high as 50% (Krumholtz, et al., 2000: 72).

Dyspnea is a chief complaint of patients in visiting and admission in the hospital (Ni, et al., 1999: 1613).

Recently in the United States more than 400,000 new cases of congestive heart failure patients were diagnosed each year and the health care costs were in excess of 20.2 million dollars. The cost of each hospitalization was 8,000-dollars/ person. The study also showed that congestive heart failure patients with dyspnea had readmission within 3 months (Albert & Sumodi, 2002: 102).

In Thailand, the first major cause of death and chronic illness is heart disease. From the records of the Ministry of Public Health, 1998 – 1999, there were 32,404 new cases of heart disease, increasing from 106,518 patients to 138,922 patients (Jarungjitaree, S., 1997: 126). The study of the Institute of Public Health Research (2000: 27) found that the costs of health care increased almost 100,000 million baht per year, which was an average 4,000 – 5,000 baht / person/ year (calculated from 62.4 million Thai people).

From the record of the Chest Disease Institute, January – December 2001, there were 41,449 out – patients and 4,951 in – patients with heart disease, the total of them were 46,400. The record from 1 January – 31 December 2002 showed 469 congestive heart failure patients with dyspnea were admitted in the hospital (Chest Disease Institute: 2001). Dyspnea is an important symptom of congestive heart failure patients while conducting daily activity. It results from a lack of knowledge and understanding about the condition of heart disease and predisposing factors of dyspnea. Therefore, knowledge to control dyspnea is very important to relieve its severity. Maneesilp, W. (2000: 34) found that dyspnea management in congestive heart failure patients caused by vulvular abnormalities, all of whom decreased activity and sitting. Most of them (90%) prevented dyspnea attack by avoiding hard work. Parinyawuthichai, S. (2001: 25) found that nursing care for patients with dyspnea caused by chronic obstructive pulmonary disease were Fowler's position to decrease venous return to the heart and increase the area to exchange gas in the lung. While Buatee, S. (2002: 27) found that the effective dyspnea management needed information from both patients and the health care team. The nurse should find out the appropriate dyspnea management guideline, provide information based on patient's living, and understand about different ways of life for males and females, the group of

working and age. Obviously, dyspnea in congestive heart failure patients is an important symptom, which has to be relieved and prevented from recurrence.

Therefore, the nurses, who are responsible of taking care of patients 24 hours per day, have a significant role in caring for dyspnea patients. That is, to evaluate severity and implement a dyspnea relief program and provide knowledge to control dyspnea in congestive heart failure patients.

Research Questions

1. What is the severity of dyspnea and what knowledge is needed to control dyspnea in congestive heart failure patients?
2. What was the difference in severity of dyspnea and knowledge to control dyspnea in congestive heart failure patients between pre-intervention and post-intervention of the dyspnea relief program?

Purposes of the Study

1. To study the severity of dyspnea and knowledge to control dyspnea among congestive heart failure patients.
2. To compare severity and knowledge to control dyspnea among congestive heart failure patients between pre-intervention and post-intervention of the dyspnea relief program.

Conceptual Framework

The conceptual framework in this study was derived from the symptom management model (Dodd, et al., 2001: 669), which improved from the symptom management model of Larson, et al., 1994: 72. This conceptual framework explained that symptom management had 3 factors, which were related to each other to make effective symptom management.

1. **Symptom experience** in congestive heart failure patients with dyspnea is the experience and knowledge to control dyspnea which will have perception of dyspnea severity that enables them to evaluate the severity by comparing it with previous experiences, and to respond to dyspnea appropriately in terms of characteristics, duration, practice during attack, and dyspnea management to relieve this symptom.

2. **Symptom management strategies** in congestive heart failure patients with dyspnea have different ways to relieve this symptom according to individual experience. Symptom management needs good relationships among doctors, nurses, patients, caregivers, and personnel in health care team to encourage and support patients' practices to relieve or control the recurrence of dyspnea. The dyspnea relief program is divided into 3 phases as follows:

Phase 1 the first 24 hours this phase is composed of nursing care activities, which is a unique, independent, and very important function of the nurse to relieve dyspnea and provide comfort for the patients. In the acute phase, patients might receive treatment according to physician's orders, for instance receiving medicine injection to increase myocardial contractility, diuretic agents, intravenous fluid for drip medicines, and oxygen cannula, retaining Foley's catheter to measure urine output in some cases, and taking soft diet with plain taste from the hospital. In this phase nursing care will be conducted according to the physician's orders together with diminishing anxiety and encouragement of feeling safe and sound for patients and provide nursing care occurred Fowler's position, which will be more comfortable to increase lung expansion and allow the diaphragm to move down that will decrease cardiac input, explain to the patients bed rest in the first 24 hours must be complied with because body movement can increase oxygen consumption, which is hazardous to the heart and exacerbates the dyspnea.

Phase 2 after 48 hours - **phase 3**, 72 hours. These phases nursing care will be conducted according to the physician's order together with comprise of guidance taught and demonstrated with a flip chart on deep abdominal breath training and stimulate them to practice every 2 hours, to increase lung expansion and increase thoracic cavity, resulting in better gas exchange for relieved dyspnea, and knowledge to control dyspnea including caused of dyspnea, how to control progressive dyspnea

and discomfort symptom and how to do first and by themselves before going to the hospital, taught and gave handbook for the congestive heart failure patients and leftlet of a heart for life about allow low diet, follow up as appointed by doctor continuous medicine taking, observing abnormal signs and symptoms, dyspnea to control behaviors comprise of guidance and education during hospitalization to make patients understand about dyspnea and practices to relieve and control this symptom.

The investigator as a nurse, whose work is related with congestive heart failure patients, has to realize about the importance of dyspnea impacts on physical functions, psychological conditions, social roles, and financial status of the patients. Therefore, the investigator is interested in undertaking this study in order to create a dyspnea relief guideline by emphasizing nursing activities to relieve dyspnea and to comfort patients as well as to make them understand about the causes and predisposing factors of dyspnea.

3. Symptom Outcome. This is a consequence of symptom experience and symptom management strategies. When dyspnea was relieved, patients' negative health perception is decreased, which makes patients healthier, more comfortable, and able to perform self-care in activities of daily living. If patients can control dyspnea by themselves, their anxiety and hospitalization period will be decreased, resulting in a better health condition. When people have a dyspnea attack, they need the assistance from others especially from health care team. This is the time for nurse to care for their health needs, provide comfort, prevent progression of dyspnea severity. They should get care provision based on physician's order and it includes education and support for congestive heart failure patients to gain knowledge to control dyspnea . All of them need advice on how to control dyspnea and manage the dyspnea symptom.

In the study, the investigator used the part of symptom management to control dyspnea severity and knowledge in congestive heart failure patients with education program. The program for relieving dyspnea severity and knowledge to control dyspnea in congestive heart failure patients was designed, based on symptom management model and is pre-post nursing intervention for dyspnea severity and knowledge to control dyspnea. In this study symptom outcome selected were severity of dyspnea and knowledge to control dyspnea.

The conceptual framework of this study is presented in the diagram below.

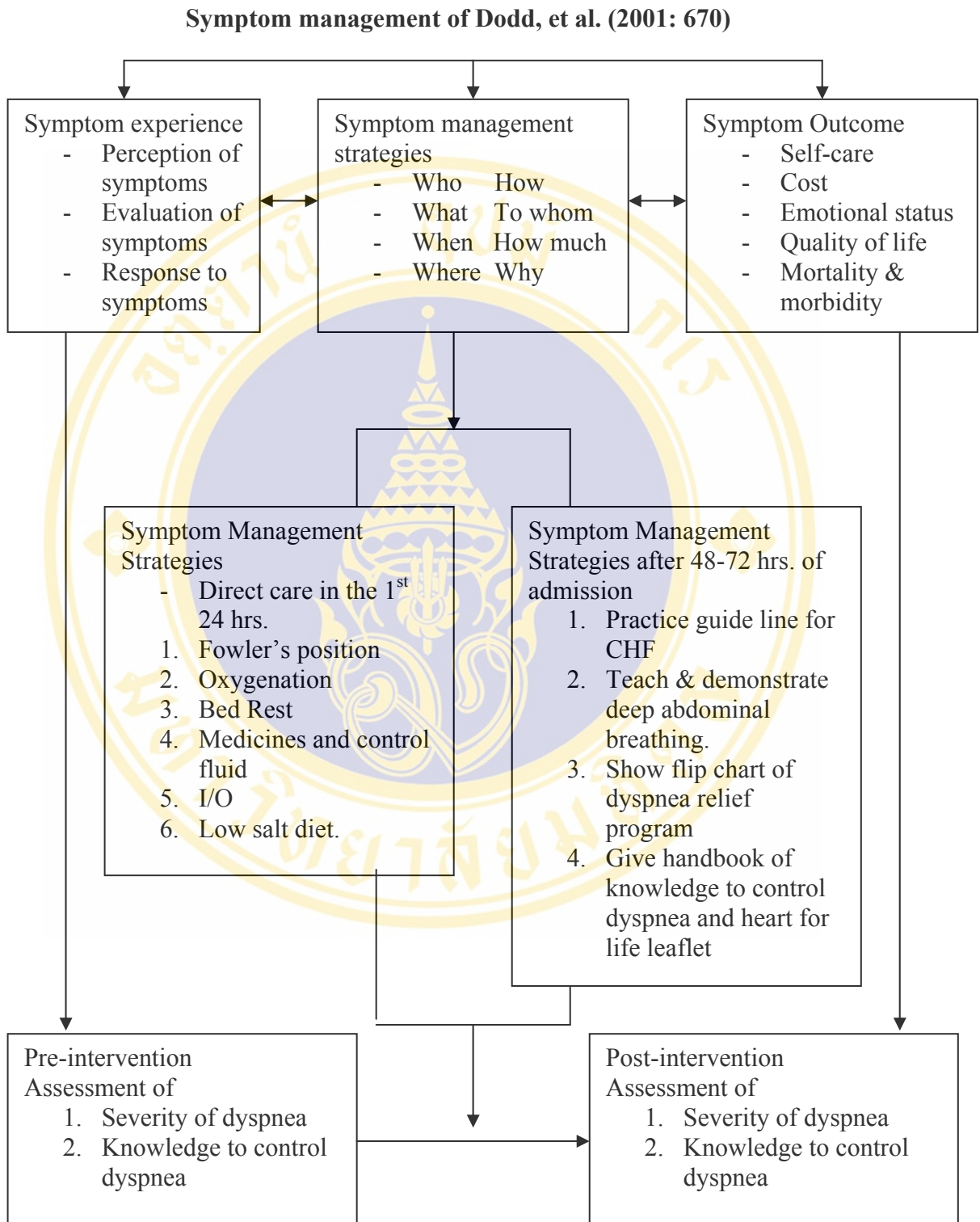


Figure 1 Conceptual Framework of the Study

Study Hypotheses

1. Severity of dyspnea in congestive heart failure patients with post – intervention of a dyspnea relief program is lower than in the pre – intervention.
2. Knowledge to control dyspnea in congestive heart failure patients with post – intervention of a dyspnea relief program is increased, than the pre – intervention ones.

Scope of the Study

This study concerns the effects of a dyspnea relief program in congestive heart failure patients were 15 years old, male and female by focusing only on severity of dyspnea and knowledge to control dyspnea in congestive heart failure with dyspnea newly admitted in the Chest Disease Institute, Ministry of Public Health, Nontaburi, Thailand.

Definition of terms

1. **Dyspnea relief program** refers to nursing therapeutic designed by the investigator for relieving dyspnea by management, nursing care which is divided into 3 phase. Phase 1 in the first 24 hours, decrease workload of heart and bed rest the patients. Fowler's position to decrease venous return, bed rest to decrease metabolic demand, oxygenation. Medicines and control fluid, I/O and a low salt diet. After 48-72 hours, nursing care according to the physician's order and education specific to congestive heart failure patients with dyspnea to practice in order to reduce or eliminate causes and influential factors of dyspnea, as well as to gain more understanding about causes of dyspnea and control of dyspnea. The teaching media applied in this education program were as follows:

1.1 Practice guideline for congestive heart failure patients. It provides knowledge about dyspnea to make patients practice appropriately with their heart disease conditions and to relieve or prevent dyspnea attack.

1.2 Flip chart of dyspnea relief program used to illustrate the explanation.

1.3 A heart for life leaflets produced by The Medical Science Division, The Ministry of Public Health.

2. **Severity of dyspnea** refers to patient's perception of dyspnea, including forced inspiration and expiration, breathing difficulty, distress sensation, uncomfortable feeling, tiring, and breathing tightness, breathing exhaustion and shortness of breath assessed according to Dyspnea Visual Analogue Scale (DVAS).

3. **Knowledge to control dyspnea** refers to patient's understanding gained from dyspnea relief program, predisposing factors including diet that should and should not be taken and water restriction 1 lit per day, continuous medicine taking, follow up as appointed by doctors, observing abnormal signs and symptoms such as weight gain, palpitation, dizziness, syncope, peripheral edema of extremities, low urine output, no excessive work or exertion, taking a rest when tired, taking medicine when tired, resting, immediate hospital visiting if symptoms are prolonged for 15 minutes, hospital visiting if symptoms not relieved, no working urgently, as well as knowing causes of tiredness and no smoking. Knowledge to control dyspnea was assessed by a questionnaire designed by the investigator had 4 categories as follows:

1. Diet and water to control dyspnea
2. Medication to control dyspnea
3. Observing abnormal signs and symptoms and visiting the doctor
4. Dyspnea control behaviors

4. **Congestive heart failure patients** refers to heart disease patients with doctor's diagnosis of heart failure and classified in grade III-IV based on the New York Heart Association (NYHA) who have shortness of breath, are unable to lie in a supine position, and it might include edema.

Expected outcomes and benefits

The investigator expected the following advantages:

1. To be a guideline for improvement of health service management and education for congestive heart failure patients with dyspnea to enable them to relieve dyspnea appropriately.

2. To be a database for health personnel to study about a dyspnea relief program and gain knowledge to control dyspnea.



CHAPTER II

LITERATURE REVIEW

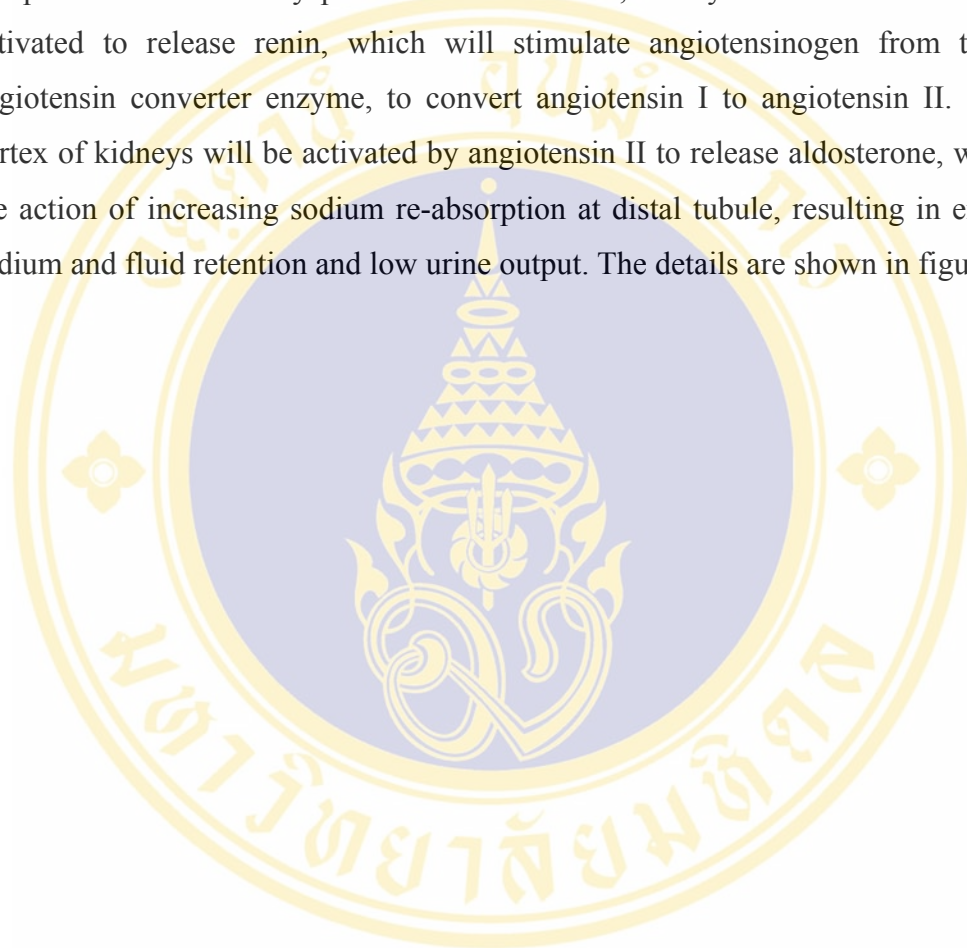
The effects of dyspnea relief program on severity of dyspnea and knowledge to control dyspnea were studied. This chapter, literature review, aims to create understanding about dyspnea relief programs and knowledge to control dyspnea. The outline of the literature review are as follows:

1. Mechanism of dyspnea in congestive heart failure patients.
 - 1.1 Left - sided heart failure
 - 1.2 Right - sided heart failure
 - 1.3 Dyspnea in congestive heart failure patients
 - 1.4 Causes of dyspnea in congestive heart failure patients
2. The impacts of dyspnea in congestive heart failure patients.
 - 2.1 Physical impacts
 - 2.2 Psychological impacts
 - 2.3 Social impacts
 - 2.4 Economic impacts
3. Symptom Management model of dyspnea in congestive heart failure patients according to the conceptual framework of symptom management (Dodd, et al., 2001:669) which was developed from the one of Larson, et al., 1994:272.
4. Dyspnea relief program on severity of dyspnea and knowledge to control dyspnea
 - 4.1 Dyspnea management by nurses
 - 4.2 Dyspnea management by patients

1. Mechanism of dyspnea in congestive heart failure patients.

Congestive heart failure is defined as a physiological state in which the heart fails to pump enough blood to meet the metabolic demands of the body in each moment (English & Mastream, 1995: 1) That is, the cardiac output (CO) is lower than

2.5 liters/minute (Porth, 1994: 467), which causes blood congestion in the circulation system, resulting in peripheral edema, such as edema of fingers, toes, hands, and feet, blood congestion in the lungs, which increased pulmonary venous pressure, resulting in pulmonary congestion, then pulmonary edema developed, which decreased lung compliance and caused dyspnea. At the same time, kidneys with low blood supply are activated to release renin, which will stimulate angiotensinogen from the liver, angiotensin converter enzyme, to convert angiotensin I to angiotensin II. Adrenal cortex of kidneys will be activated by angiotensin II to release aldosterone, which has the action of increasing sodium re-absorption at distal tubule, resulting in enhancing sodium and fluid retention and low urine output. The details are shown in figure 2.



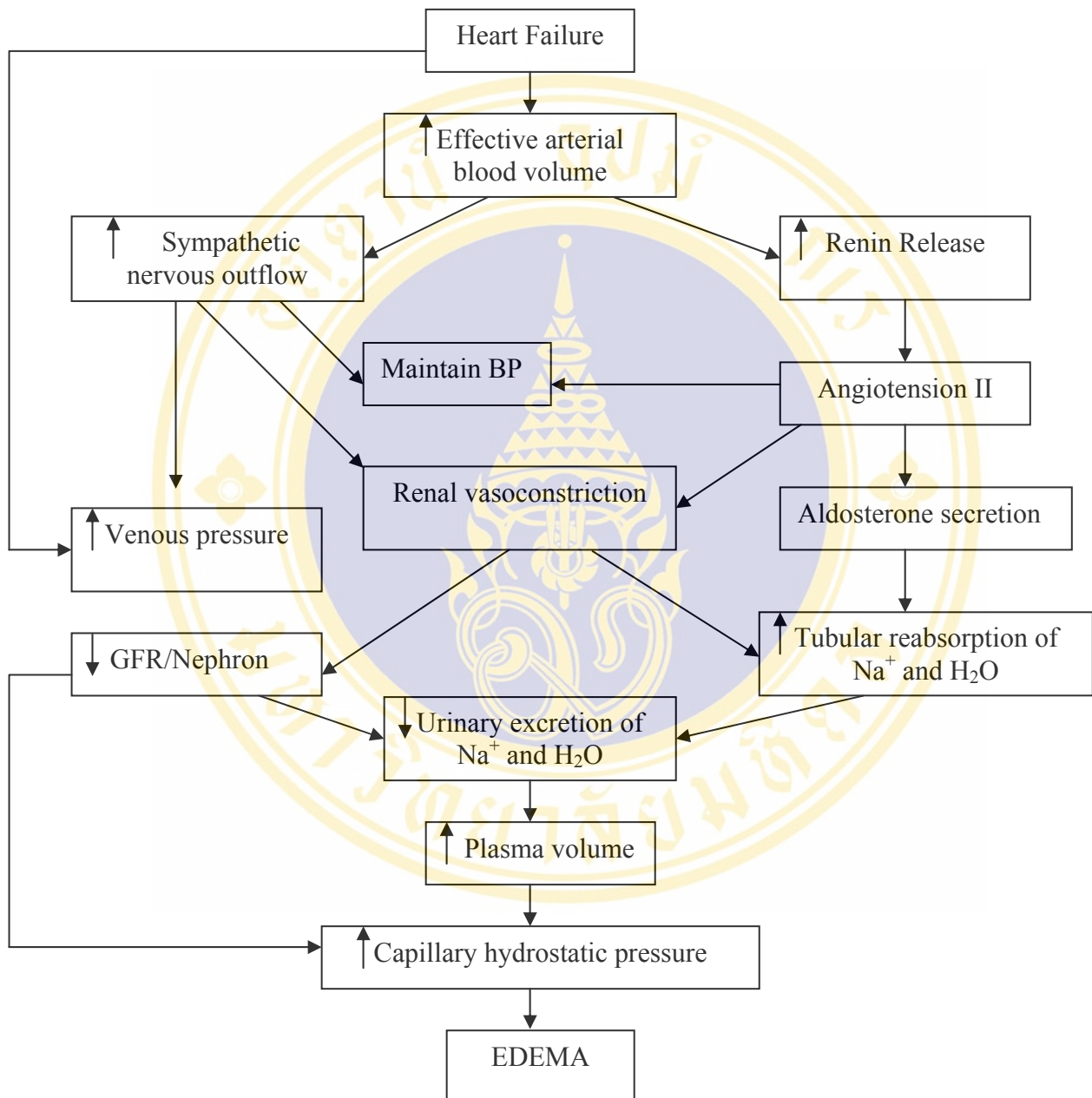


Figure 2 Process of edema and low urine output from congestive heart failure (Bonchaung, P. 1998: 50).

Congestive heart failure can be divided into 2 types: Left-side heart failure and Right-side heart failure.

1.1 Left – sided heart failure.

This occurs as a result of decreasing left ventricular contractility to eject an adequate volume of blood, and decreasing left ventricular performance, which causes excessive left ventricular end – diastolic volume (LVEDV). This phenomena results in pulmonary congestion, then pulmonary edema, and impaired gas exchange, which causes high partial pressure of blood carbondioxide (high Pa CO₂). High Pa CO₂ will stimulate the chemoreceptor center, resulting in diminished pH of spinal fluid around respiratory center, which affects further on the respiratory control center in the medulla to make respiratory muscles contract, then an increasing rate and force in breathing occurs in order to eliminate carbondioxide. Finally, hypoxia is developed, which indirectly activates the chemoreceptor center; when partial pressure of oxygen was reduced, brain tissues will conduct anaerobic metabolism, which produces accumulations of lactic acid in the spinal fluid resulting in decreasing its pH to stimulate the chemoreceptor center. There are peripheral chemoreceptors, aortic receptors and carotid receptors at the aortic body and carotid body. The carotid chemoreceptor has a more active role in respiratory control and will be activated by changes of artery pressure, low oxygen, high carbondioxide, and low pH. These changes will cause nerve impulses from the carotid body to pass through cranial nerves IX (Glossopharyngeal nerve) and cranial nerves X (Vagus nerve) to stimulate the respiratory control center in the medulla. The mechanism of dyspnea results from mechanic receptors and chemoreceptors being activated and sending feedback to the respiratory control center. Then, the impulse is sent directly to the respiratory muscles or to the brain cortex. The sending of impulses to the respiratory muscles caused tension of the muscles, and patients will have a feeling of force as breathing or dyspnea (Steele & Shaver, 1992: 66). The details are shown in figure 3.

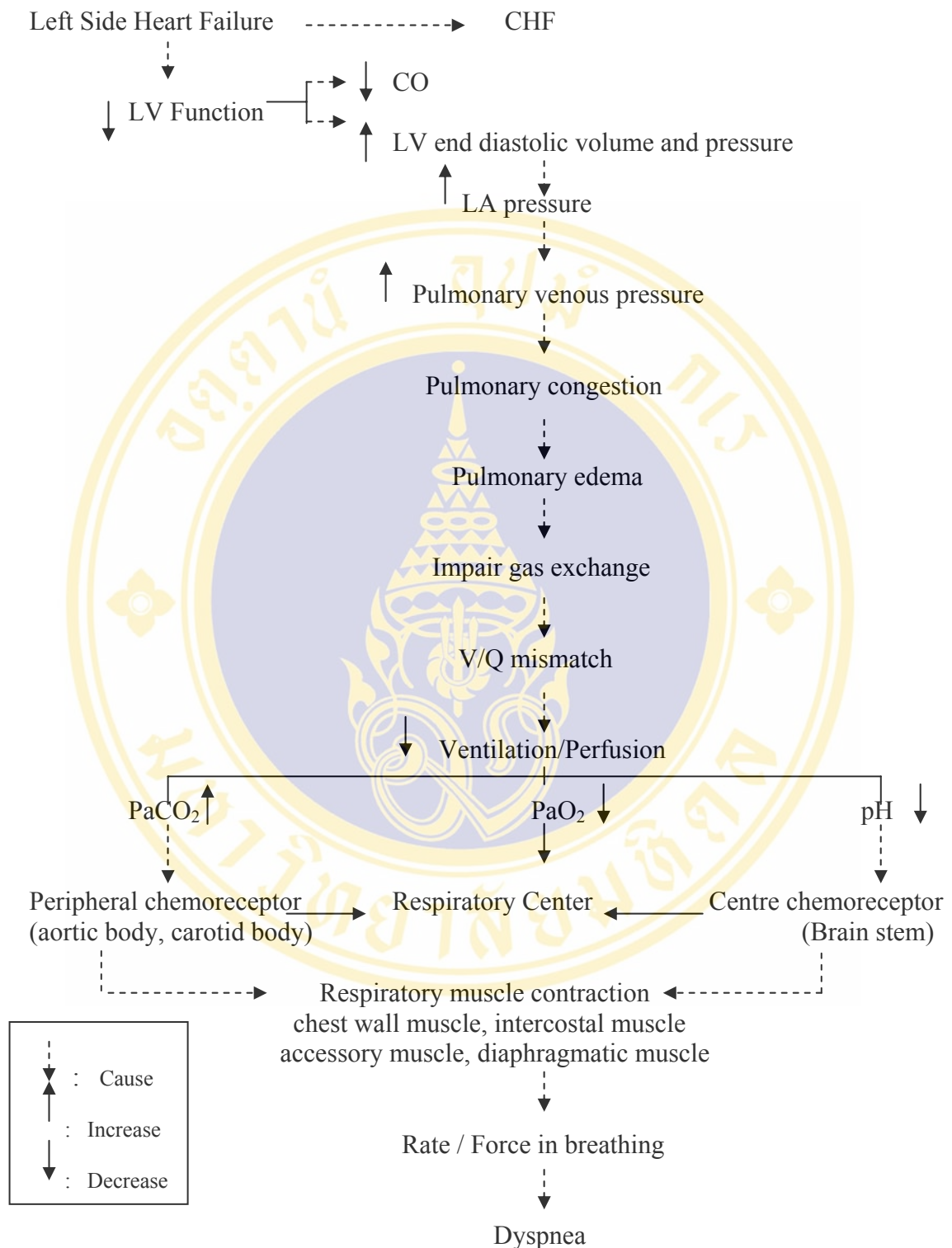


Figure 3 Process of dyspnea in left – sided heart failure (Ahmedyai, 1993; Fishbein et al., 1989 cited by Birk, 1997).

Signs and Symptoms of left – sided heart failure (Unnapirak, L. 2000: 200)

1. Dyspnea on exertion (DOE). This is difficult breathing and expiration on exertion or having physical activities, for instance walking upstairs, running, quick walking, and excessive exercise, etc.

2. Paroxysmal nocturnal dyspnea (PND). This condition is characterized by attacks of severe shortness of breath after sleeping for 2 – 3 hours and it usually awakens the patients from sleep to sit or stand for a while, then the suffocation subsides and they can return to bed. The patients might always have this symptom in a supine position, which is an early sign of congestive heart failure caused by augmentation of blood volume at night due to the re-absorption of edema from dependent portions of the body during recumbency. Moreover, the increase in sympathetic tone when the body is in a supine position causes decreases of venous pressure and fluid re-absorption to blood circulation, resulting in increasing cardiac input.

3. Orthopnea, is a dyspnea in the recumbent position. Patients with orthopnea must elevate their head by sitting upright or sitting in front of a table to relieve their breathlessness, or lying in a supine position with their heads on several pillows because fluid from lower extremities will increasingly be redistributed into the heart and lungs in a supine posture.

4. Cheyne strokes respiration is characterized by hyperventilation and hypocapnea, followed in turn by recurrence of apnea.

5. Cough is a co – symptom of dyspnea caused by leakage of fluid from pulmonary capillaries into alveoli. Patients with left – sided heart failure usually have a cough with frothy sputum due to expulsion of fluid in the alveoli mixed with air in the lungs. Some patients might have pink frothy sputum from laceration of pulmonary capillaries, resulting in leakage of blood into the alveoli.

1.2 Right – sided heart failure

This results from decreasing right ventricular contractility, which causes increasing right ventricular end – diastolic volume, resulting in increasing right ventricular end – diastolic pressure (RVEDP) (Unnapirak, L. 2000: 207). With increasing RVEDP, blood cannot flow to the right atrium but congests in the superior

which causes edema. In the beginning, edema happens in peripheral or lower parts of body as a pitting edema (Abraham, et al., 1993: 678). The details are show in figure 4.

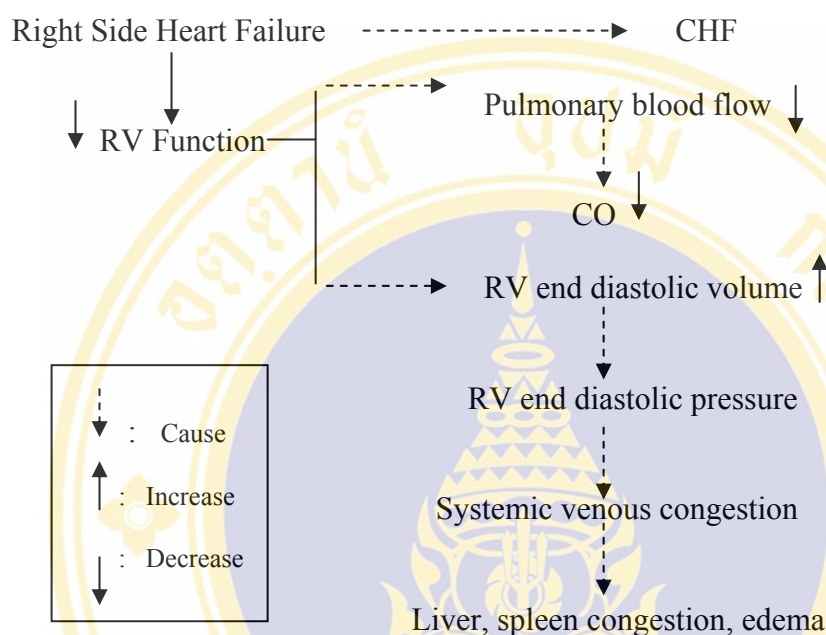


Figure 4 Right – sided heart failure causes edema in organs and parts of body (Abraham, et al., 1993: 678).

Signs and Symptoms of right – sided heart failure

1. Ascites, it occurs as a consequence of impaired or obstructed blood flow to the right ventricle. Blood will congest in the inferior vena cava and hepatic vein caused hepatic congestion. Prolonged hepatic congestion will cause cardiac cirrhosis (Black & Mattassarini, 1995: 1711). When pressure in the portal system is increased, hydrostatic pressure will cause fluid leak into the abdominal cavity.

2. Nocturia, results from blood and fluid redistributed easily back to the heart and kidneys while patients are in a supine position (Burke & Porth, 1991: 474). In general, congestive heart failure will be followed by right – sided heart failure (Ahrem, 1995: 26). Therefore, signs of left – sided and right – sided heart failure are usually found at the same time.

3. Cyanosis, this sign can be found in late congestive heart failure as a result of impaired gas exchange in the lungs and is obviously seen when oxyhemoglobin

decreases lower than 5 gm%. Patients with congestive heart failure will have peripheral cyanosis due to not enough oxygen supply to the body.

4. Cachexia, congestive heart failure can cause malnutrition, muscle atrophy, and reduction of muscle tone, so called cardiac cachexia.

5. Angina pain, this sign results from decreasing cardiac output, which causes diminishing myocardium blood supply.

6. Oligurea, this sign results from diminished renal blood supply.

7. Neck vein engorged, this sign is caused by obstructive blood flow into the right atrium due to increasing right atrium end – diastolic pressure.

8. Arrhythmia is caused by decreasing myocardial performance, resulting in increasing severity of heart failure.

9. Confusion, delirium, dizziness, faintness, tachycardia and sometimes syncope is caused by decreasing cerebral blood supply.

10. Abdominal distension, indigestion, anorexia, nausea and vomiting result from low blood supply to the digestive system.

11. Diaphoresis, is caused by increasing adrenergic action in congestive heart failure.

12. Fatigue, is a consequence of not enough sleep due to nocturnal dyspnea, frequent coughing and urination (Piyapakornchai, P. 1998: 141).

1.3 Dyspnea in congestive heart failure patients.

The higher respiratory centers are in the thalamus, cerebral cortex, and respiratory control center in the brain stem, which is composed of pons and medulla as the senders of nerve impulses to the respiratory center. The impulse will be transferred to the nerve cells in the spinal cord and passed through phrenic nerves (C 3, 4, 5) and intercostal nerves (T1 - T12). As a result, the external intercostals muscles contract and decrease vital capacity and limits perfusion, resulting in increasing total lung capacity, diminished intrathoracic pressure, then ambient pressure flows into the nose and trachea. The exertion, exercise, isometric contraction and using small muscles, such as arm exercise, eating, combing, speaking, gesture changing, and contraction of respiratory muscles cause increasing energy demand. As a result, partial pressure of blood oxygen is diminished and partial pressure of blood carbondioxide

resulting in decreasing blood pH, so called acidosis. Low blood pH will send feedback to the respiratory center (Powell, 1998: 264) and causes patients to increase the rate and force of breathing. The details are shown in figure 5.

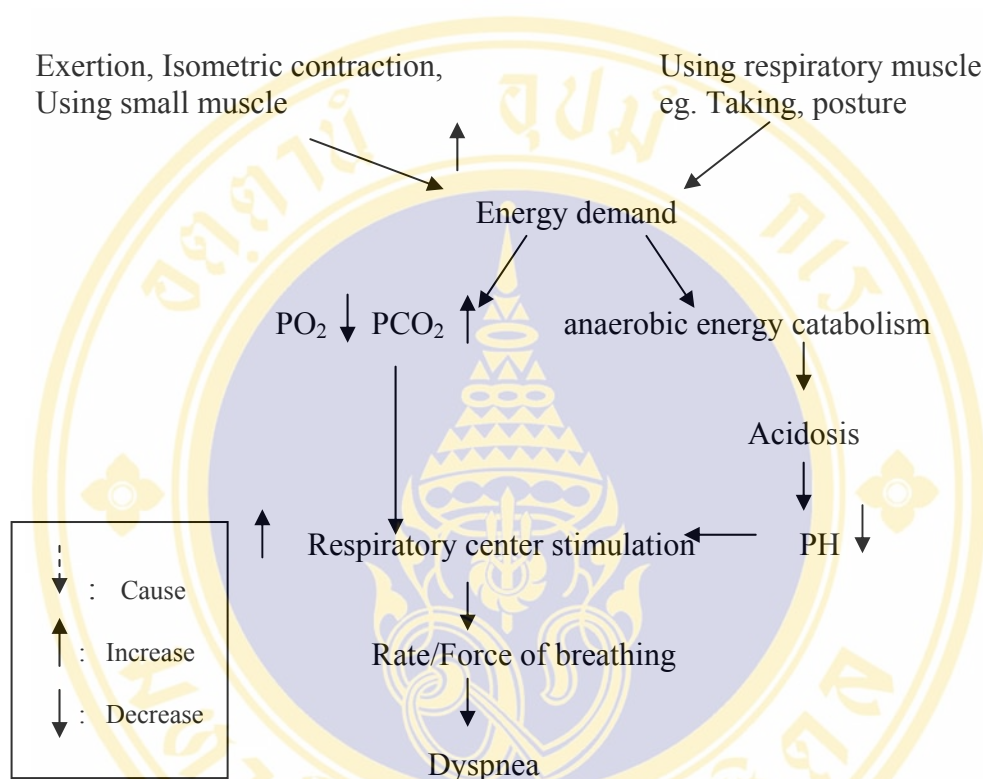


Figure 5 Cycle of dyspnea by increasing energy demand (Powell, 1998: 219).

1.4 Causes of dyspnea in congestive heart failure patients.

1.4.1 Caused by predisposing factors

1.4.1.1 Improper gesture, exertion, and exercise. The activities of pushing heavy objects, such as a cabinet or bed or lifting objects weighing over 10 pounds (4.5 kgs.), such as holding baby, lifting the luggage (Techaritpitak, A. 1997: 155) should be avoided. Improper exercise and gesture to congestive heart failure were causes of dyspnea (Carlson & Rigel, 2001:351).

1.4.1.2 Eating salty food will cause excessive water retention in the body, which increases cardiac workload (Techaritpitak, A. 1997: 158).

1.4.1.3 Poor medication control causes exacerbation of heart disease. In the case of forgetting to take medicine, doubling the amount of tablets is inhibited and the doctor should be visited if medicine was not taken for 2 days.

1.4.1.4 Not enough rest increases cardiac workload, for instance, poor sleep for many days. Patients with feeling of tiredness should take a rest.

1.4.1.5 Receiving excessive intravenous fluid causes over hydration.

1.4.1.6 Stress in physical, psychological, and emotional dimensions will stimulate the sympathetic nervous system to secrete catecholamine, which increases cardiac function, resulting in tachycardia, and increasing oxygen demand (Polaski & Tatso, 1996 : 698).

1.4.2 Caused by poor cardiac performance

1.4.2.1 Myocardial ischemia results from coronary stenosis, which causes coronary obstruction.

1.4.2.2 Myocardial infarction means the infarcted myocardium cannot contract or work efficiently.

1.4.2.3 Valvular stenosis causes increased vascular resistance. For example, pulmonary valve stenosis causes increasing myocardial contraction to beat the vascular resistance in order to send enough blood supply throughout the body, resulting in increasing end – diastolic volume and myocardium over-stretch. (Unnapirak, L. 2000: 201).

1.4.2.4 Valvular regurgitation causes blood regurgitation, which depends on the severity of regurgitation and the difference of end – diastolic pressure between left ventricle and aorta. High left ventricular end – diastolic pressure will increase left ventricular end – diastolic volume, resulting in congestive heart failure (Unnapirak, L, 2000: 203).

1.4.2.5 Hypertension will elevate vascular resistance, resulting in increasing myocardial contraction to beat this resistance.

1.4.2.6 Pericarditis causes the myocardium to contract harder to pump blood.

1.4.2.7 Thyrotoxicosis is causes high metabolism, tachycardia, resulting in increasing cardiac workload.

1.4.2.8 Anemia, decreasing of hemoglobin, which carries oxygen to supply the body, will increase cardiac workload in order to bring enough oxygen throughout the body.

1.4.2.9 Arrhythmia, especially tachycardia, is a reinforcing factor that easily induces congestive heart failure. Tachycardia not only decreases cardiac output but also increases cardiac workload, which elevates oxygen demand.

1.4.2.10 Nutritional deficiency, thiamine deficiency and alcoholism will interfere with myocardial function, resulting in changing the characteristics of cardiac contraction and increasing the heart rate.

2. The impacts of dyspnea in congestive heart failure patients.

2.1 The impacts of dyspnea on patients will present in physical, psychological, social, and economic aspects as follow.

2.1.1 Physical impact, dyspnea is a common symptom attack in congestive heart failure patients. Seventy percents of patients who came to the emergency room and were admitted in the hospital had the chief complaint of dyspnea. (Parashall & Welsh, 2001 : 55). Patients suffered from progressive shortness of breath, resulting in diminished quality of life. (Parashall, et al., 2001: 48). In the study of Maneesilpa, W. (2000: 36) patients with dyspnea from vulvular abnormalities agreed that exertion or hard work is a predisposing factor of dyspnea, tachypnea, palpitation, and general edema due to insufficient blood supply to the body, resulting in an abnormal way of life and preventing them doing tasks to their full potential. The study of Sindhu, S. and Sriprasong, S. (2001: 52) about health condition and activity level of myocardial infarction in recovery phase, indicated that while in the hospital, patients should be encouraged to do activities using 3 – 5 METs (Metabolic equivalent) to enable them to do daily tasks and prepare them to do family and social tasks in their responsibility and then increasing the activity level gradually. Practically while in the hospital, most of the patients were activity limited and had caregivers to help them in nearly all aspects, therefore, they usually had activity of only walking 10 – 20 meters to the bathroom (Charoenkul, B., 1994: 194). Patients and their relatives must decide to adjust the activities by themselves (Tantithum, J. 1995 and

Chaladsumthornvathce, N., 1996). Although there were suggestions or education about activity adjustment provided by the health care team prior to discharge, it was only in general, for instance, suggestions of taking medicine, following up as appointed, and taking enough rest. The period with the highest risk of readmission is the first 30 days after initial discharge. Education for adaptation after myocardial infarction, had no continuous effect (Hankunakul, W., 1997), social support from family or peer network was an important influential factor of patients' activities in the recovery phase (Smith, et al., 1996: 27, 85-94).

2.1.2 Psychological impact, patients with dyspnea had forced-dependency, which caused stress and anxiety. (Friedman & Griffin, 2001: 98; Moser, 1997: 517) Decreasing physical ability affected their psychological condition; patients were depressed from daily activity limitation. They felt fear of death, uncertainty, loss of self – confidence and body – image in edema cases, were ashamed of body change, felt isolated, and powerless to control severe, acute, and exacerbated dyspnea (Martenson, et al., 1998: 1222). It affected the patients' emotional status and might cause emotional fluctuation (Friedman & Griffin, 2001: 99).

2.1.3 Social impact, patients with dyspnea had to limit daily activities due to decreasing physical ability. Their activities had to be adjusted according to cardiac performance or severity of dyspnea at each moment. Some duties or activities had to be omitted or diminished, such as personal, family, social, and career roles (Moser, 1997: 57).

2.1.4 Economic impact, patients had pay the treatment costs, which affected personal and family finance. If patients were often admitted in the hospital, they would loss money from absence from work and expenses for treatment. In the United States, patients with congestive heart failure admitted in the hospital had to pay 8,000 dollars per head (Carslon & Riegel, et al., 2001: 351). Self – management was an important practical way to make patients perceive the problems of dyspnea. Early stage of dyspnea management needed knowledge, skills, and motivation (Carslon & Riegel, 2001; Glaser, 2000: 4).

3. Symptom management model of dyspnea in congestive heart failure patients according to the conceptual framework (Dodd, et al., 2001 : 669), which was adapted from the one of Larson, et al., (1994 : 272). The details are as follows:

Symptoms according to Dodd, et al., (2001), refers to personal experiences toward biopsychosocial sensations, and cognition of that person.

3.1 Model assumption

3.1.1 Symptom refers to perception or experience of each person, which was told by that particular person.

3.1.2 Each person has a chance of exacerbation due to influential factors, such as dangerous work, therefore, the symptom should be managed prior to exacerbation.

3.1.3 Persons who cannot use verbal communication, e.g. babies, unconscious people, might experience the symptom as well, so parents or caregivers should assess and find out the management techniques because every symptom occurrence should be eliminated or relieved.

3.1.4 Management strategies might aim at each person, group, family, or working environment.

3.1.5 Symptom management is a dynamic process, which is adjusted from the personal outcome, nursing care, health condition / illness, or environment.

3.2 Nursing care framework is related to the symptom management model

3.2.1 Personal framework is composed of personal variables, i.e. personal, psychological, social, and physiological characteristics, which influence the personal perception and response to the symptom. Development of these variables consists of development level or maturity of person.

3.2.2 Health and illness framework, is composed of health or illness variables, including the risk factors, such as injuries or disabilities, which can directly or indirectly affect the symptom experience, symptoms management strategies, and symptom outcome.

3.2.3 Environmental framework, environment refers to a group of conditions or internal context of the symptom and consists of physical, social, and cultural variables. Physical environments are home, office, and hospital. Social

environments are social support and personal relationship. Cultural environments are belief, values, and practice, which are different in each nation, race, or religion.

The symptom management model is composed of 3 dimensions related to each other to make the model effective. They are symptom experience, symptoms management strategies, and symptom outcome as shown in the diagram.

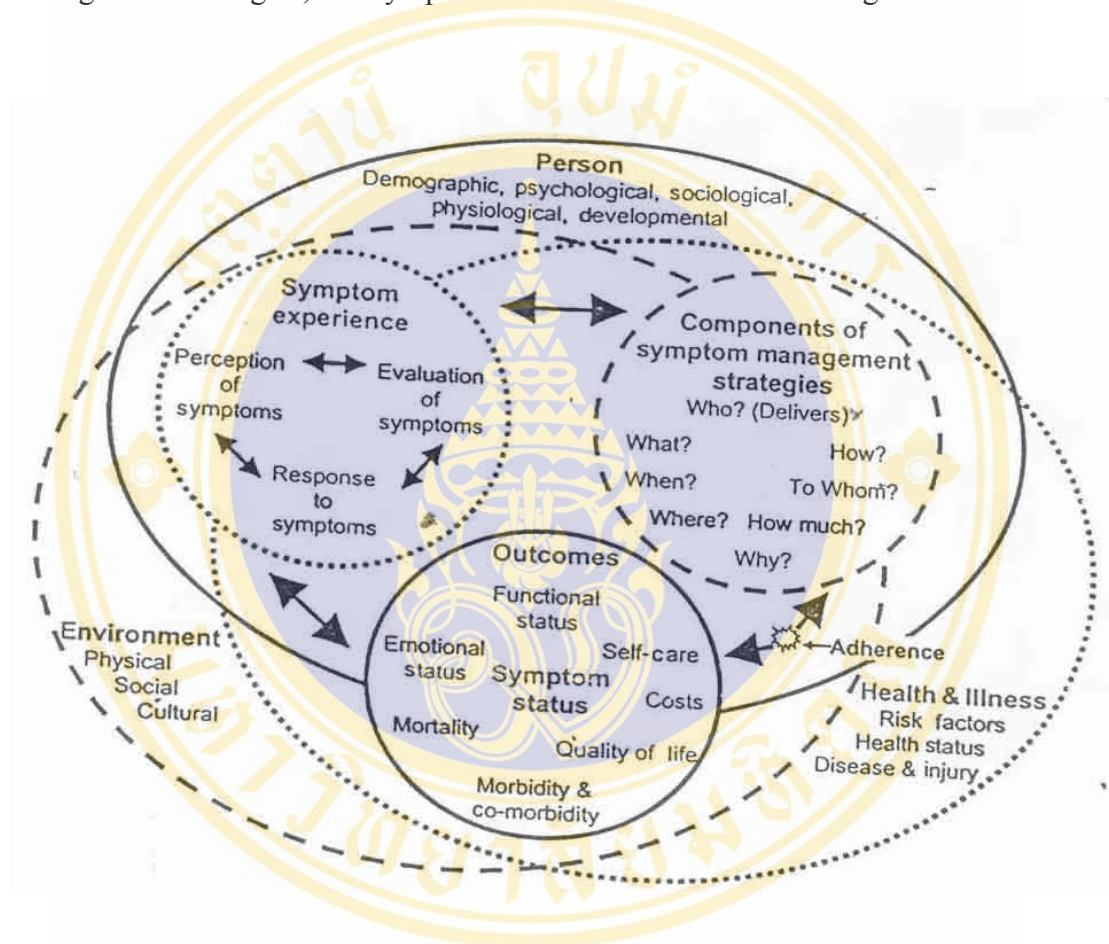


Figure 6 Symptom management model (Dodd, et al., 2001: 670)

1. Symptom experience is characterized by the dynamic reaction of perception, evaluation of, and response to symptoms.

1.1 Perception of symptoms refers to a person's perception of feelings different from usual or normal practice. The person has to be conscientious and wise to collect these feelings and find out the meanings from a specific environment or situation, then decide about severity, causes, treatment ability, and impact of symptoms on life. There are 3 influential factors of perception as follow.

1.1.1 Personal factors comprise the general personal characteristics: age, gender, race, marital status, and economic status, psychological characteristics:

character, cognitive ability, and motivation, social characteristics: family, culture, religion, physiological characteristics: rest, patterns of activity, and physical ability.

1.1.2 Environmental factors are circumstances or backgrounds which affect perception of symptoms and are composed of physical circumstances: home, office, and entertainment place, social circumstances: social support, and cultural circumstance: belief, values, and traditional practice.

1.1.3 Health and illness factors consist of risk factors, health conditions or illness. Risk factors can be transferred behaviors and / or personal behaviors, such as smoking. Health conditions mean physiological, structural, and functional abnormalities. Diseases or illness are acute or chronic health deviation due to pathophysiology.

1.2 Evaluation of symptoms refers to a person's evaluation of severity, location, frequency, patterns of incidence that are transient or permanent, and life threatening or induce disability.

1.3 Response of symptom refers to feeling, thinking, or behavior which occurs after the symptom has developed. One symptom can have many responses as follow.

1.3.1 Physical responses are physical signs and symptoms, such as palpitation, changing of respiratory rate, and insomnia.

1.3.2 Psychological responses result from cognitive change or emotional change, such as emotional fluctuation, concentration deficits, or negative self – esteem.

1.3.3 Behavioral responses are noticeable actions using verbal or non – verbal communication, such as crying, shouting, conflict, duty change, social isolation, change of sleep pattern, and role change.

2. Symptom management strategies are a dynamic process, which can be changed over time or over patient's perception. They aim to slow down or avoid negative effects of symptoms by medical treatment, specialized management, and self – care. Symptoms management begins with an evaluation of symptom experiences according to the patient's concept that analyzes the practice goal and process. Symptom management can be achieved by a good relationship among patients, family and personnel in a health care team. Moreover, symptom management strategies

depend on compositions of giving: what, where, why, how much, who, and how to give, and adherence. Its success depends on consistency, completeness, and accuracy. In addition, health care providers and the health care system have an influence on adherence.

3. Symptom outcomes result from symptom experiences and symptom management strategies, which have 8 indicated factors: symptom condition, functional condition, self – care ability, financial status, quality of life, emotional condition, morbidity rate / co – morbidity, and mortality rate. These 8 factors are related to each other with the symptom condition as an axle. In this study, the factors which were selected were severity of dyspnea, and knowledge to control dyspnea.

4. Dyspnea management strategies

4.1 Dyspnea management by nurses.

In the acute phase, nurses have dependent role in dyspnea management according to physician's orders, such as administration of medicines and intravenous fluid. Regarding the treatment, the action of those medicines with the initial administration assists in relieving dyspnea by enhancing the myocardial efficiency and reducing fluid overload. They also have an independent role to promote patients' well-being and relieve dyspnea as soon as possible, by eliminating the factors and causes involved.

The dependent role

1. Administration of medicines is as follows:

1.1 Digitalis strengthens the myocardial contractions and controls the ventricular rate in atrial fibrillation, increases cardiac output, promotes diuresis, and reduces the filling pressure of the failing ventricles, with the consequent reduction of pulmonary vascular congestive and central venous pressure. These could improve the heart's pumping performance by increasing myocardial contractility. Nurses should be careful about side effects, and if the heart rate is lower than 60 beats/min they should stop medicine and notify the physician (Braunwald, 1997: 493).

1.2 Diuretics such as furosemide (lasix) or ethacrynic acid which affect the loop of Henle are used in acute pulmonary edema. They can reduce pulmonary

congestion and pulmonary venous pressure, probably by virtue of a direct vasodilator effect on systemic arterial beds. Careful haemodynamic monitoring using a Swan-Ganz catheter is advised. Hypokalaemia caused by diuretic therapy may produce cardiac dysrhythmias. This may be prevented by the simultaneous administration of potassium supplements or potassium-sparing diuretics, along with careful monitoring of serum electrolyte and acid-base balance (Leyden, 1992: 83)

1.3 Vasodilator drugs are used to reduce preload and improve cardiac output. These drugs produce a variable effect, depending on the particular drug used. They can dilate arterioles or veins. Peripheral arteriolar dilatation reduces afterload by reducing the resistance to left ventricular outflow. Sodium nitroprusside and nitroglycerine are the most widely used. Both drugs act directly on the vascular smooth muscle, but while nitroprusside reduces both arteriolar and venous tone, nitroglycerine is more active on the venous side of circulation (Leyden, 1992: 84).

1.4 The inotropic agents, most widely used in acute heart failure are dopamine, dobutamine and salbutamol. These drugs increase cardiac contraction and thereby increase cardiac output, although overstimulation increases myocardial oxygen consumption. Because of its ability to increase cardiac output without an increase in myocardial oxygen supply it is at present the inotrope of choice to treat a failing heart (Leyden, 1992: 85).

2. Administering oxygenation, giving oxygen can increase the oxygen supply to meet the oxygen demands of the tissues and reducing myocardial oxygen demands.

3. In severe congestive heart failure it may be necessary to restrict the sodium intake to 0.5 g. daily, this requires the elimination of all salt from cooking and at the table as well as many common foods, e.g. milk. Fluid restriction may also be required to decrease the pulmonary congestion. While retention of excess fluid is primarily dependent on the body sodium content, in advanced congestive heart failure the ability to excrete excess fluid may be impaired (Leyden, 1992: 81).

The independent roles are as follows:

1. Monitoring a patient's condition. The patient's haemodynamic status will be continually monitored using nursing observation of vital signs, fluid balance, daily weight, peripheral edema, and changes in respiratory status. If acute cardiac failure is

related to a cardiac dysrhythmia continuous ECG monitoring is required for the detection and prompt treatment of any further dysrhythmias. In severe low output state, urinary catheterisation and hourly urinometer readings will be required to monitor the renal output (Leyden, 1992: 82).

2. Placing the patients in the high Fowler's position, head lifted 45-60 degree can increase lungs expansion, resulting in increased lungs capacity and moving down the diaphragm and reduce pulmonary congestion to relieve dyspnea.

3. Bed rest decreases metabolic demand and provides oxygen supply to vital organs. It can relieve dyspnea.

4. Appropriate activity according to NYHA functional class. The duration of rest depends on the severity of the heart failure and the patients' response to medical treatment. Physical activity should be done to preserve body function and not increase cardiac workload by gradually performing from sitting at the side of the bed, to sitting up in a chair, to walking increased distances, in order to not increase cardiac workload.

5. Abdominal deep breathing, abdominal deep breathing can increase oxygen supply in all parts of the lungs especially in the lower part. So it cardiac workload by inhaling deeply and slowly by nose until the abdomen is inflated, then exhaling can be decreased by the mouth slowly because it increases intra thoracic pressure and overshoot of arterial pressure to increase oxygen supply in the thoracic cavity then the dyspnea can be relieved.

6. Avoid increasing abdominal pressure such as Valsalva maneuver because it increases the metabolism and cardiac workload. Patients with heart failure have impaired cardiac pumping ability and limited cardiac reserve so the condition of the patients may be worsened (Porth, 1994: 479).

7. Relaxation techniques could relieve dyspnea in congestive heart failure patients by decreasing oxygen demand and anxiety. The study of Gredon and Ross (1995: 525), found that emotional distress such as anxiety, depression and fear stimulates the autonomic nervous system and adrenal gland, which releases chemical substances. These interfere with cellular glucose uptake, diminish protein synthesis and increase intensity of muscles. Relaxation technique can decrease anxiety and dyspnea (Gift, & Pugh, 1993: 373). Relaxation is dominated by parasympathetic activity to decrease the heart rate and reduce oxygen demands while anxiety is

dominated by sympathetic activity, making them mutually exclusive. When a relaxation state is achieved, there is a decrease in heart rate and respiratory rate (Gift, & Moore, Solken, 1993: 242). Relaxation techniques such as praying, positive imagination, and meditation (Sindhu, S., 1992: 164) can relieve anxiety.

8. Give General knowledge to patients in taking care of themselves such as low salt diet, taking medicine regularly, observing abnormal signs and symptoms such as edema, palpitation, presyncope, follow-up and have physical activity according to NYHA functional class. The New York Heart Association functional classification is used to evaluate cardiac function. Patients with functional class III can do activities that require energy of less than 2 – 3 Mets, such as sitting on the bed 10 – 15 minutes twice a day in the morning and evening, sitting on the bed-side chair 10-15 minutes once a day, walking around the bed not over 3 rounds once a day. In addition, patients should start with less than 3.0 Mets activities, then gradually increase it to develop cardiac performance for activity which should be a normal daily lifestyle. It not increase the cardiac workload (Dafoe, 1993: 527).

4.2 Dyspnea management by patients.

An episode of pulmonary edema usually occurs at night when the person has been reclining for a period of time. This is because the gravitation forces are removed from the circulatory system when a person lies down, as a result, edema fluid that had been sequestered in a compartment is redistributed to the pulmonary circulation.

An acute episode of pulmonary edema may also occur as a complication of impaired cardiac pumping ability in myocardial infarction, or it may occur during rapid infusion of intravenous fluids or a blood transfusion in a person with limited cardiac reserve. As the lungs edema worsens, signs and symptoms of a cough produce frothy and often blood-tinged sputum which occurs from air mixing with serum albumin and red cells that have moved into the alveoli.

The patients can use physical techniques to control dyspnea as follows:

1. Positioning, patients usually sit and gasp for air (Carrieri and Janson-Burklee, 1986: 284) There are a lot of features of different positions such as leaning forward, or straight up. These positions promote lung expansion. Therefore, gas

diffusion is increased. The upper chest is relaxed with full movement of the lower chest to decrease the pulmonary congestion (Graydon, 1995: 525).

2. Breathing technique; the patient is encouraged to take inspiration as deep as possible, slowly inhale by the nose until the abdomen is inflated, then exhale by the mouth slowly until the abdomen is deflated. Expansion of the lower chest should be encouraged with the shoulders and upper chest as relaxed as possible to increase oxygen supply and decrease cardiac workload (Pat & Ashworth, 1992: 218).

3. Stop activity and slow down the movement; patients used this technique to relieve dyspnea because it decreased the body's oxygen demand and the working of the respiratory muscles.

4. Use coldness by facing the fan (Simon & Schwastzstein, et al., 1987: 1009). The patients use an electric fan to blow the face, stay in a fresh-air area, and take cool liquid or use a cool sponge which is good. The cold will decrease the tiredness by trigeminal nerves stimulation that transfers the signal to the central nervous system to slow breathing (Buatee, S., 2002: 30).

5. Apply medicine ointment or balm on the chest and medicine inhalation because it causes vasodilatation, blood circulates through out the body, oxygen consumption is reduced, which increases oxygen left in the blood, resulting in decreased dyspnea (Carrieri & Janson-Bjesklie, 1986: 292).

Conclusion

1. A dyspnea relief program by the investigator according to physician's order and independent role of nurses helps to relieve dyspnea and creates well-being utilizing positioning, activity limitation, bed rest, effective breathing, and education in practice to control dyspnea.

2. Education provided to congestive heart failure patients with dyspnea is very important. Nurses are significant persons for the patient to manage self care and control dyspnea, therefore, they should understand about the causes and severity of their dyspnea in order to practice appropriately with their heart failure condition.

CHAPTER III

METHODOLOGY

The Study Design

This study is a quasi – experimental study aimed to investigate the effects of a dyspnea relief program on severity of dyspnea and knowledge to control dyspnea in congestive heart failure patients using a one group pretest posttest design.

Population and Samples

The population of this study were newly admitted patients, congestive heart failure patients were over 15 years old, male and female. The 20 samples who have dyspnea and orthopnea were recruited.

Inclusion Criteria are as follows:

1. Doctor's diagnosis of congestive heart failure with the New York Heart Association class III, IV.
2. Agree to participate in this study.

Exclusion Criteria are as follows:

1. Have underlining diseases with Renal failure, Asthma, COPD, excepted Hypertention.
2. Diabetes patients with FBS over 300 mg%.
3. Patients on a mechanical respirator.

Setting

This study selected the study site at the Chalerm Prakiert Building of the Chest Disease Institutes, Nonthaburi, which is a specific center for heart and lung diseases. The 7th floor of the regular male medical ward and the 6th floor of the regular female

medical ward, admitted congestive heart failure patients in 24 beds on each floor. Most of the patients have congestive heart failure and are admitted in hospital with the chief complaints of dyspnea, and inability to sleep in a supine position. The admitted patients were mostly female. 80 % of whom had valvular stenosis or regurgitation and 20 % coronary artery disease, which caused frequent dyspnea. Seventy percent of male patients, had coronary artery disease, which caused myocardial infarction with clinical manifestations of dyspnea, chest pain, angina pectoris, their average rehospitalization was every month. The average period of hospitalization for congestive heart failure was at least 3 days. When congestive heart failure patients were admitted, the first 24 hours of hospitalization included intravenous fluid replacement and they were administered for increasing cardiac output and diuretics, monitored for intake-output, vital signs, bed rest, low salt diet, and were on oxygen therapy 3-5 lit per minute. Then 48, 72 hours after admission, they were cared for by nurses and other health care providers similar to the first 24 hours. Education to provide understanding about dyspnea practice to the patients has an important role to decrease the rehospitalization rate. However only congestive heart failure patients who received operative treatment would be educated about pre-and-post operative preparation by staff nurses at the surgical unit. The Chest Disease Institute is a 317-bed hospital under the authority of the Ministry of Public Health and provides training for cardio-vascular and pulmonary medical residents. In the year 2001 the record of heart disease patients showed 41,440 out-patients and 4951 in-patients. Since January-December 2002, there were no exact statistical report about the number of congestive heart failure patients admitted during this time. But when counting the number of admission times it was about 469 times. The out Patients Department starts at 7.00-11.00 o'clock. Its personnel consist of medical professors, residents, registered nurses, technical nurses, nursing students, and other staff.

Instrumentation

The study instruments were composed of four parts as follows:

Part 1 The dyspnea relief programs.

Part 2

2.1 Demographic data

2.2 Dyspnea experiences data

Part 3 Dyspnea severity assessment in congestive heart failure patients.

Part 4 Assessment tool of knowledge to control dyspnea in congestive heart failure patients.

Part 1 The dyspnea relief programs

Dyspnea relief program on dyspnea severity and knowledge to control dyspnea in congestive heart failure patients comprised of teaching, suggestions, and education. It was divided into 3 phases as follows:

Phase 1 The first 24 hours of hospitalization. Direct nursing care was provided according to physician's orders.

Phase 2 48 hours after admission, nursing care was provided according to physician's orders and education about knowledge to control dyspnea in congestive heart failure patients.

Phase 3 72 hours after admission, nursing care was provided according to physician's orders and education about knowledge to control dyspnea on diet and water intake restriction and medicines to control dyspnea.

Teaching patients according to the practice for dyspnea patients handbook

1. How important is the heart?
2. Start to take care of your heart.
3. Basic pathophysiology of dyspnea
4. Causes of dyspnea
5. Characteristics of dyspnea in congestive heart failure patients.
6. What to do when a dyspnea attack happens.

Teaching patients to use deep abdominal breathing, slowly inhaling by the nose until the abdomen is inflated, then exhaling by the mouth slowly and longer than inhalation until deflation to increase lung expansion and intrathoracic cavity, resulting in better gas exchange. This breathing technique should be done consistently.

Phase 1 The first 24 hours of hospitalization.

8.00-9.00 A.M. Provide nursing care according to physician's orders by the investigator and registered nurse of the Chest Disease Institute as follows:

1. Position patient in a comfortable posture by the investigator: Fowler's position high head – lifted sitting, sitting upright with pillows support at head, neck, arms, or crouching with pillow on the over – bed table and bending over, which will be more comfortable to increase lung expansion and allow the diaphragm to move down that will decrease cardiac input.

2. Check oxygen cannula whether it was in place or if oxygen mask was applied, check whether it was too tight or too loose, to make sure patients received enough oxygen according to physician's orders.

3. Explain to the patient that bed rest in the first 24 hours must be complied with because body movement can increase oxygen consumption, which is hazardous to the heart and exacerbates the dyspnea.

4. I.V. fluid and medicine provided according to physician's order by registered nurse of the Chest Diseases Institute and patient's arm with intravenous fluid injection are kept stretched with no flexion or frequent movement, and edema or pain on that area are observed by the investigator.

5. Record fluid intake and urine output. Patients have to drink water from the provided bottle, if they do not so, the same amount of water that patients drink from other sources is poured out of the bottle by the investigator.

6. Make sure that patient only take low salt diet provided by the hospital nutritionist. The food from outside might have fish – sauce, soy – sauce, monosodium glutamate, or Chinese celery, which are salty and will increase cardiac work load, resulting in unrelieved dyspnea. If patient want to have food from outside, these salty ingredients cannot be put in the food. Salty and preserved food, such as preserved pork, pickles, monosodium glutamate, sodium bicarbonate, and dried food are prohibited by the investigator.

10.00 A.M. Record vital signs and notify physician if abnormal or if there are any changes seen by the investigator and registered nurse of the Chest Disease Institute.

11.00-12.00 A.M. Evaluate the dyspnea severity using 7 questions in the dyspnea assessment tool. Provide nursing care according to physician's orders. Assist patients in their daily activities, such as eating and eliminating.

1.00-2.00 P.M. Let patients rest with 45-60 degree head lift and pillow support under neck and arms.

3.00-4.00 P.M. Investigator assists in patients daily activities.

4.30-6.00 P.M. Assist patients in eating a low salt diet and provide nursing care according to physician's orders by the investigator and registered nurse of the Chest Disease Institute.

Phase 2 48 hours after admission, nursing care is provided according to physician's orders when patients had relieved dyspnea, respiratory rate = 16 – 20 times / minute, (Srikaew, U. 1995: 9) blood oxygen saturated = 93 – 99% (Techaritpitak, A., 1994: 114). These suggestions and knowledge should be provided:

8.00-9.00 A.M. Provide direct nursing care and assist their daily activity as in the first 24 hours by the investigator and registered nurse of the Chest Disease Institute.

10.00 A.M. Record vital signs and notify physician if abnormal signs are found or there are any pathological changes (by the investigator and registered nurse of Chest Disease Institute).

10.30 A.M. Evaluate patient's attention and concentration prior to entering the dyspnea-relief program by using questions created by the investigator.

- a. Identify man, child, or woman
- b. Count numbers backward from 10 to 0
- c. Match the color band with the day, yellow, pink, blue, orange, green.

11.00-12.00 A.M. Evaluate the dyspnea severity using 7 questions from the dyspnea assessment tool of the investigator. Teach patients to use deep abdominal breathing and stimulate them to practice every 2 hours, to increase lungs expansion and increase thoracic cavity, resulting in better gas exchange.

1.00-2.00 P.M. Teach deep abdominal breathing technique. Evaluate their knowledge using the knowledge assessment tool of the investigator. The investigator advises and teaches according to the practice guideline for congestive heart failure patients.

3.00-4.00 P.M. Provide their eating by the investigator, medicine taking, and intravenous fluid replacement, and provide direct nursing care according to physician's orders by registered nurses of the Chest Disease Institute.

4.30-6.00 P.M. Let patients rest.

Phase 3 72 hours after admission.

8.00-9.00 A.M. Provide direct nursing care and assist their daily activities by the investigator and registered nurse of Chest Disease Institute.

10.00 A.M. Record vital signs by investigator. Reevaluate patient's attention and concentration prior to entering the dyspnea-relief program using the same test created by the investigator.

- a. Identify man, child, or woman
- b. Count number backward from 10 to 0
- c. Match the color band with the day, yellow, pink, blue, orange, green.

10.30-11.00 A.M. Teach deep abdominal breathing technique. Reapply assessment of knowledge to control dyspnea to evaluate increase in patient's knowledge.

12.00 A.M. Recommend low salt soft diet because salty food will increase cardiac workload.

1.00-2.00 P.M. Additional knowledge should be provided as follows:

1. Predisposing factors of dyspnea should be avoided as follows:

- 1.1 Excessive exertion.
- 1.2 Excessive exercise.
- 1.3 Drinking more than 1 lit per day.
- 1.4 Having salty food.
- 1.5 Discontinuous medication control, dose of medicine should not be decreased or increased without physician's prescription.
- 1.6 Emotion, excitement, fear, stress, anxiety.
- 1.7 Not enough rest, insomnia.
- 1.8 Exposure to hot or cold weather.
- 1.9 Being in a crowded area and poor ventilation.

2. Teach and advise about appropriate diet. The diet appropriate to dyspnea patients is a soft diet, easy to digest and with limited fiber, because digestion needs blood supply to gastrointestinal tract, which increases the cardiac workload.

2.1 Decrease the amount of food but increase the number of times of eating to prevent abdominal distention and dyspnea.

2.2 Green vegetables and fruits should be taken to replace potassium, which might be lost from diuretic action and which causes weakness.

2.3 Vegetable protein from beans with not too much fiber, for instance soybean milk, and low fat milk should be taken.

3. Inhibited diet

3.1 Diet with fish sauce, soy sauce, monosodium glutamate, salted celery, shrimp paste, preserved fish, sodium bicarbonate.

3.2 Dried food: dried shrimp, dried fish, pickles, and preserved food or fruits.

3.3 Instant food: instant noodle

3.4 Alcohol beverages

3.5 Snacks.

4. Consistent medicine taking must be controlled for safety, therefore, patients should know actions and side – effects of each medicine. Three type of drugs usually prescribed to patients with dyspnea are:

4.1 Digitalis can promote myocardial contractility. This medicine should be taken according to physician's order consistently and the dose of medicine should be controlled under doctor's prescription. Its side effects are:

4.1.1 Nausea & vomiting, diarrhea

4.1.2 Aura vision

4.1.3 Palpitation, tachycardia, syncope.

4.1.4 Muscle pain and fatigue

4.2 Diuretic agents can control the amount of fluid in the body. Its side – effects are:

4.2.1 Palpitation, arrhythmia

4.2.2 Fatigue.

4.3 Vasodilators can increase cardiac performance. Their side effects are :

4.3.1 Headache

4.3.2 Hypotension

5. Appropriate self-care to control dyspnea

5.1 Pathophysiological condition of heart disease, severity of symptom.

5.2 Medication control for congestive heart failure condition and how to gain admission, consistent medicine taking, and knowledge of drug action; time and forgetting to take medicine and side – effects.

5.3 How to avoid immediate increase of cardiac workload such as watching exciting movies or sport, sudden changes of hot or cold weather and living in crowded/ poor ventilated areas.

5.4 Having a low salt diet.

5.5 Adequate rest at least 8-10 hours/day.

5.6 Taking activities of daily living based on limited energy and immediate rest at once when dyspnea occurs.

5.7 Rigorous follow up of appointment schedule.

5.8 Self-care based on nurses and physician's advice.

5.9 Monitoring and observing abnormal signs and symptoms including severe cough, dyspnea, inability to rest in a supine position, arrhythmia, palpitation, fainting, weakness, paresthesia or paralysis, edema, weight gain of more than 1 kg/day

5.10 Keep peace in mind, meditation training and optimistic view of congestive heart failure are in control of the disease.

3.00-4.00 P.M. Let patients rest.

4.30 P.M. Assist in their eating and provide education to relatives about food.

5.00-6.00 P.M. Evaluate dyspnea severity by a structured interview based on 7 questions of severity assessment tool and reassess knowledge to control dyspnea by using 18 questions.

Part 2

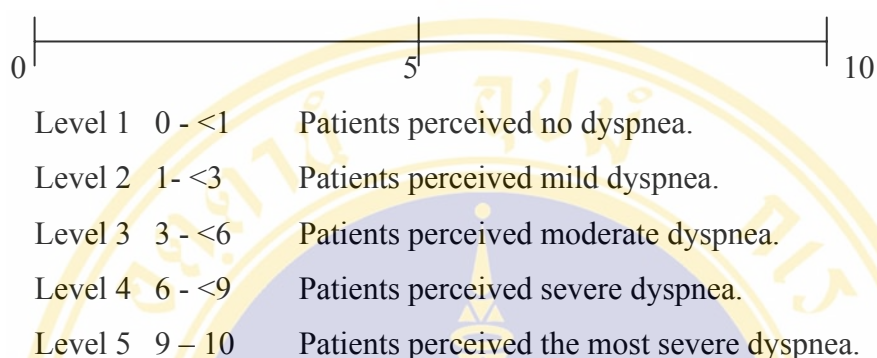
2.1 Demographic data was composed of basic personal information such as gender, age, marital status, domicile, educational level, average monthly income of the family, occupation, duration of heart disease, and treatment. These data were collected from interviews, medical records, and doctor's notes.

2.2 Dyspnea experiences data were nine questions developed by the investigator and contained questions about dyspnea experienced in the last year, frequency of dyspnea, each time of dyspnea needing hospitalization, duration of the last hospitalization, selfcare during dyspnea attack, characteristics of dyspnea, cause of dyspnea, time of usual attack, caregivers during dyspnea attack.

Part 3 Dyspnea severity assessment in congestive heart failure patients.

This assessment was developed from the research review by the investigator. Dyspnea severity assessment was composed of 7 questions. Severity of dyspnea was adapted

from the visual analogue scale of E.C Huskisson in 1994, which was characterized by horizontal line containing 0-10 scores in each question which referred to the perception of dyspnea with a meaning of no dyspnea to very severe dyspnea and it was divided into 5 levels (Gift, A., 1989: 323). The meaning was as follows:



Part 4 Assessment tool of knowledge to control dyspnea in congestive heart failure patients. The investigator reviewed and analyzed many studies to create 18 questions, the 1st -3rd, 9th, 10th questions were about diet and water intake for CHF patients, the 4th -6th were about medicine, the 7th, 11th -18th were about patients behavior, the 8th was about noticing to administer symptoms. Patients can answer yes or no in each question, the correct ones will get 1 score, otherwise 0. High scores mean good knowledge and low scores mean poor knowledge.

Validity, Objectivity and Reliability

These research tools were tested for content validity as follow:

Assessment tool of knowledge to control dyspnea, practice guideline for CHF patients, and dyspnea relief program in CHF patients were examined for accuracy and content validity by 3 experts: 1 cardiologist, 1 cardiological nursing instructor, and 1 cardiological nurse expert. The recommendations from these experts were used to improve the instrument and tried out for objectivity in 10 patients who had dyspnea with congestive heart failure.

Reliability

These instrument were tested for reliability as follow:

The assessment tool of knowledge to control dyspnea in congestive heart failure patients was tested with 10 congestive heart failure patients with dyspnea admitted in

the Chest Disease Institute and analysed by using the Kuder Richardson equation (K.R. 20) (Sriussadaporn, P., & Wattananon, Y., 1986: 119; Leucha, Y., et al., 2000: 124) equation. The reliability of the knowledge control dyspnea were 0.5. Then these questionnaires were tested with 20 congestive heart failure patients and the K.R. 20 were 0.53 as follows:

$$\text{Equation } r_{tt} = \frac{n}{n-1} \frac{[1 - \frac{\sum pq}{\sigma^2 \bar{X}}]}$$

When r_{tt} = reliable coefficient of questionnaire

n = total number of questions

p = the number of patients with correct answers for each question

q = the number of patients with incorrect answers for each question

$\sum pq$ = p times q in each question, then added together

σ^2 = Variance of total scores

$\bar{X}$ = Means of total scores

Data collection

Data collection was conducted by the investigator from January to April 2003 as follows:

In this study, the investigator collected data based on the following procedures

1. The investigator asked for an introduction letter from the Graduate School of Mahidol University to the director of the Chest Disease Institute asking for permission to collect data.
2. After obtaining permission from the Human Ethics Committee of the Chest Disease Institute, then the objective of this study were explained to the nursing director, supervisor, head nurse, and registered nurses in the male and female regular medical wards.
3. Data collection was done every day from 8.00 A.M.- 6.00 P.M. from January-April 2003.
4. Newly admitted patients were selected according to the inclusion criteria.

5. The investigator introduced herself, and explained the purpose of this study to the patients and ask for cooperation.

6. Human rights protection of joining in this study were explained (Appendix B).

7. The steps of this study were explained and queries were answered. If patients agreed to join in this program, they signed the consent form. Then these implementations were conducted:

7.1 Interviews for personal information.

7.2 The first evaluation after 2-3 hours of admission. The investigator evaluated dyspnea severity in congestive heart failure patients utilizing 7 questions of dyspnea assessment and the severity classification of this study. After that the congestive heart failure patients were reevaluated on dyspnea at 48-72 hours after admission.

8. The second evaluation of severity of dyspnea using 7 questions in dyspnea assessment at 48 hours after admission, which the investigator created with a Visual Analogue Scale with scores of 0 – 10 was administered (Appendix C).

9. The first evaluation of patient's knowledge using 18 questions in assessment of knowledge to control dyspnea at 48 hours after admission was done. The process of data collection as shown in figure 7.

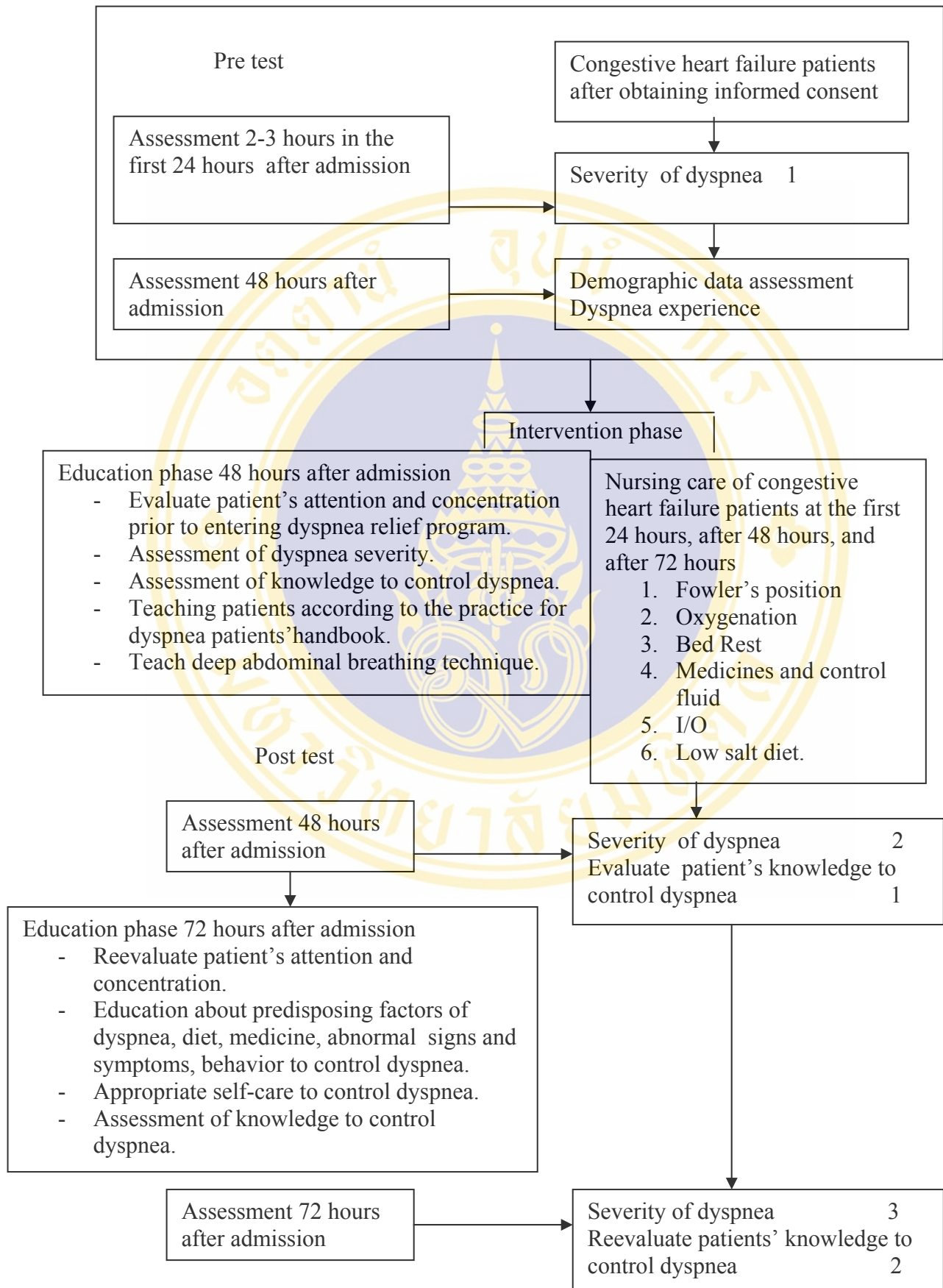


Figure 7 The process of data collection

Termination of the Study

1. Patient was referred to another unit.
2. Data collection completed 72 hours
3. Patient was discharged or passed away before 72 hours.

The investigator was the same person who reevaluated at 48-72 hours after admission, and then all data were processed and statistically analyzed.

Protection of Human Subjects

The investigator realized about research ethics, and the utilization of the patients data, and was concerned about their rights and the impacts on them. First of all, the investigator will introduce herself, explain the objective of this study and explain the general presentation of data. The patients have the right to join or quit at any time they wanted to without any effect on their treatment (Appendix B). The investigator answered their queries and let them sign the consent form when they agreed.

Data Analysis

After data were processed, the scores were analyzed as follows:

1. Demographic data were calculated by percentage, means, and standard deviation. Age, income, duration of illness, duration from the last hospitalization, and last admission period were calculated by means, and standard deviation. Gender, religion, marital status, domicile, education, occupation, duration of disease, duration of illness with the heart disease, length of stay in hospital, duration of last admission after hospital discharge, treatment, dyspnea experience in the last year, frequency of dyspnea, admission after dyspnea attack, and dyspnea experience were calculated by percentage.
2. The Friedman test was used to compare the mean and standard deviation of severity of dyspnea ($p < 0.000$).
3. The Wilcoxon signed rank test was used to compare the mean and standard deviation of knowledge to control dyspnea ($p < 0.05$, $p < 0.000$).

CHAPTER IV

RESULTS

This study was a quasi – experimental, one group pre – post test design that examined the effects of a dyspnea relief program on severity of dyspnea and knowledge to control dyspnea in congestive heart failure patients. Purposive sampling was applied to select 20 patients of both sexes at the 7th floor regular male medical ward, and the 6th floor regular female medical ward, Chalerm Prakiert Building, the Chest Disease Institute, Nonthaburi, which has regular wards for all kinds of heart disease patients. The findings from this study were presented as follows :

Part I Descriptive data of the patients

1.1 The demographic characteristics

1.2 Dyspnea experiences

Part II The effects of a dyspnea relief program on severity of dyspnea and knowledge to control dyspnea in congestive heart failure patients.

Part I Descriptive data of the patients

1.1 The demographic characteristics of the samples

Table 1. Numbers and percentages of samples characterized by gender, religion, marital status, domicile, education, occupation, duration of illness with heart disease, length of stay in hospital, duration of last admission after hospital discharge, treatment.

Demographic characteristics	Number (n = 20)	Percentage
Gender		
Female	12	60
Male	8	40
Religion		
Buddhist	19	95
Islam	1	5
Marital Status		
Single	2	10
Married	16	80
Windowed /Divorced /Separated	2	10
Domicile		
Bangkok – suburban	5	25
Rural	15	75
Education		
Primary education	13	65
Secondary education	5	25
Diploma	2	10
Occupation		
Unemployed	4	20
Government service	2	10
Private employed	14	60

Table 1 Numbers and percentages of samples characterized by gender, religion, marital status, domicile, education, occupation, duration of illness with heart disease, length of stay in hospital, duration of last admission after hospital discharge, treatment. (continued)

Demographic characteristics	Number (n = 20)	Percentage
Duration of illness with heart disease (months)		
3 – 24	13	65
15 – 46	1	5
47 – 68	0	0
69 – 90	1	5
> 91	5	10
Length of stay in hospital (days)		
0 – 10	12	60
11 – 20	6	30
21 – 30	2	10
Duration of last admission after hospital discharge (days)		
0 – 10	10	50
11 – 20	3	15
21 – 30	1	5
> 31	6	30
Treatment		
medication	20	100

Table 1 showed that of 20 congestive heart failure patients, 60% were female. Most of them were married (80 %) and Buddhist (90 %). Most samples lived in rural areas. The most common educational level of the samples was primary level or prathom 4 – 6 (65 %), secondary level (25 %) and only two samples (10 %) achieved the highest education of a diploma. Their occupations were private employment (60 %). Most of them had a 3 – 24 month illness period (65 %) and the last hospitalization period was 0 – 10 days ago. The last admission period of the sample was 0 – 10 days.

All of the samples received medication treatment including digitalis, lasix and isordil (40 %).

Table 2 Demographic characteristics of samples classified by age, family income, duration of illness with congestive heart disease, length of hospital stay, and duration of last admission after hospital discharge. (n=20)

Demographic characteristics	min	max	$\bar{X}$	SD
Age (years)	18	73	61.85	4.47
Family income (bahts / month)	1,000	30,000	6575.3	4163.01
Duration of illness with heart disease (months)	2	312	67.4	121.5
Length of hospital stay (days)	0	27	9.65	7.86
Duration of last admission after hospital discharge (days)	0	150	27.95	37.45

Table 2 showed that the samples were 18 – 73 years old on average, with a mean of 61.85 years old (SD = 4.47). Their families had a mean income of 6575.35 bahts per month (SD = 4163.01) and mean of duration of illness with congestive heart disease of 67.4 months (SD = 121.25). Most samples had length of hospital stay for 9.65 days (SD = 7.86) and duration of last admission after hospital discharge was for 27.95 days. (SD = 37.45)

1.2 Dyspnea experience

Table 3 Frequency and percentage of the samples classified by dyspnea experience.

Demographic characteristics	Number (n = 20)	Percentage
Dyspnea experience in the last year		
Yes	17	85
No	3	15
Frequency of dyspnea with congestive heart failure in the last year *		
No	3	15
Once	1	5
Three times	1	5
Over four times	15	75
Admission after dyspnea attack **		
Yes	17	85
No	3	15
First management by patients when dyspnea attack		
Stopped working or doing activities	3	15
Sitting	12	60
Breathing technique, deep breathing	4	20
Others – shower	1	5

Table 3 Frequency and percentage of the samples classified by dyspnea experience.
(continued)

Demographic characteristics	Number (n = 20)	Percentage
The characteristics of dyspnea		
Dyspnea on exertion	7	35
Inability to sleep, had to sit up at night	11	55
Intermittent attack, progressive dyspnea	2	10
Cause of dyspnea		
Over – exertion	4	20
Walking too far	10	50
Unknown cause	6	30
The time dyspnea usually attacked		
In the morning	1	5
After midnight	11	55
Uncertain time	8	40
Have caregivers during dyspnea attacked		
Yes	18	90
mother	2	10
sister	5	25
daughter	3	15
husband	2	10
wives	6	30
No	2	10

* Frequency of dyspnea last year with a mean of 4.85 (SD = 3.15)

** Duration from last admission to this admission were 27.95 days (SD = 37.45)

Table 3 showed the majority of samples had dyspnea experience of over four times in the last year (75 %) and admission after dyspnea attack (85 %). Self management when dyspnea attack were sitting (60 %) and the characteristic of dyspnea were inability to sleep, had to sit up at night (55 %) and the most common cause of dyspnea was walking too far. Dyspnea usually attacked after midnight. Most sample had caregivers during dyspnea attack and caregivers are women (mother, sister, daughter, wives).

Table 4 Dyspnea severity assessment in congestive heart failure patients (n = 20)

Severity level of dyspnea	Assessment time											
	(2-3 hours at The 1 st day)				after 48 hours				after 72 hours			
	min	max	$\bar{X}$	SD	min	max	$\bar{X}$	SD	min	max	$\bar{X}$	SD
1. Forced inspiration and expiration	6.5	10	9.17	1.24	3.5	7.5	5.67	1.12	.00	6	2.31	1.42
2. Breathing difficulty	5	10	8.85	1.78	2.7	10	5.59	1.86	.00	5	1.69	1.09
3. Distress sensation	5	10	9.35	1.32	1.8	7.6	5.09	1.56	.00	2.5	0.98	0.87
4. Uncomfortable feeling	6.2	10	9.32	1.20	2	7	4.50	1.37	.00	5	1.39	1.12
5. Breathing had tightness	5	10	9.13	1.52	1	8	4.07	1.60	.00	5	1.01	1.24
6. Breathing exhaustion	5	10	9.30	1.34	1	10	5.46	2.60	.00	5	1.66	1.24
7. Shortness of breath	6.7	10	9.41	1.05	.00	10	4.46	2.49	.00	2.5	1.32	0.83

Table 4 showed that severity of dyspnea assessed 2 – 3 hours after admission were the most severe dyspnea. Most samples had shortness of breath, distress sensation, uncomfortable feeling, breathing exhaustion and forced inspiration and expiration ($\bar{X}$ = 9.41, 9.35, 9.32, 9.30, and 9.17, SD = 1.05, 1.32, 1.20, 1.34, and 1.24 respectively). After 48 hours, all dyspnea severity were decreased to a moderate level ($\bar{X}$ = 5.67, 5.59, 5.46, 5.09, 4.50, SD = 1.12, 1.86, 2.60, 1.56, 1.37, 2.49, 1.60). Then 72 hours after admission their respiration came to a nearly normal pattern ($\bar{X}$ = 2.31-1.01, SD = 1.47-1.24) respectively.

Table 5 Raw scores of correct questions, mean and standard deviation of knowledge to control of dyspnea in congestive heart failure patients. (n = 20)

Knowledge to control dyspnea	Pre intervention score	Post intervention score
1. Diet and water to control dyspnea		
1. Have salty food	2	18
2. Avoid salty diet, conserved food	18	20
3. Have low salt, soft diet	20	20
4. Drink water of more than 1 lit of water per day	9	20
5. Limited drinking water to less than 1 lit per day	7	17
Total score	56	95
Full score	100	100
2. Medication to control dyspnea		
1. Decreased medicine when you feel well	15	20
2. Increased medicine when noticed abnormal signs	15	20
3. Continuous medicine taking	20	20
Total score	50	60
Full score	60	60
3. Observing abnormal signs and symptoms and visiting the doctor	13	18
Total score	13	18
Full score	20	20

Table 5 Raw scores of correct questions, mean and standard deviation of knowledge to control dyspnea in congestive heart failure patients. (n = 20) (continued)

Knowledge to control dyspnea	Pre intervention score	Post intervention score
4. Dyspnea control behaviors		
1. Missing doctor's follow up	13	20
2. Excessive work or exertion and exercise for making healthy condition	16	20
3. Immediately taking a rest and sitting when tired	19	20
4. If unrelieved, tried to apply dilator inhalation or oxygen therapy for temporary relief (before visiting the doctor)	17	20
5. Inadequate rest because of working	9	18
6. After unsuccessful self management for dyspnea, waiting for self-improvement	10	17
7. Hurry to various activities within limited time	9	20
8. Dyspnea caused by inappropriate action in response to heart condition	18	18
9. Still drinking alcohol or smoking the same as before illness	16	20
Total score	127	171
Full score	180	180

Table 5 Raw scores of correct questions of knowledge to control dyspnea in the four categories before receiving the dyspnea relief program and nursing care according to physician's orders and health care team were (56, 50, 13, 127) respectively.

The first category was involved with diet and water intake in number one of category. Most samples had no knowledge about proper diet and their diet had been cooked with

all kinds of sauce. They had a two score from a maximum of twenty scores. They did not realize how important the restriction of fluid intake to one liter per day. They had a seven scores from a maximum of twenty score. It was a lower scores than all items. The raw scores after receiving the dyspnea relief program were higher in all items more than the pre program of knowledge to control dyspnea (95, 60, 18, 171, respectively).

Table 6 The comparison of severity of dyspnea in congestive heart failure patients at 2 – 3 hours, after 48 hours, and after 72 hours (pre-test posttest) by Friedman test (n = 20)

Severity of dyspnea	Pre – test 2-3 hours at the 1 st day		Post – test after 48 hours		Post – test after 72 hours		df	X ²	Sig
	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD			
1. Forced inspiration and expiration	9.17	1.24	5.67	1.12	2.30	1.42	2	39.5	.000*
2. Breathing difficulty	8.85	1.28	5.59	1.86	1.69	1.09	2	38.68	.000*
3. Distress sensation	9.35	1.32	5.09	1.56	0.98	0.87	2	39.52	.000*
4. Uncomfortable feeling	9.32	1.20	4.50	1.37	1.40	1.13	2	40.00	.000*
5. Breathing tightness	9.13	1.52	4.08	1.60	1.01	1.24	2	40.00	.000*
6. Breathing exhaustion	9.30	1.34	5.46	2.60	1.66	1.24	2	36.70	.000*
7. Shortness of breath	9.41	1.05	4.63	2.50	1.32	0.83	2	37.10	.000*
Total	64.5	7.61	35.02	10.54	10.36	5.79	2	40.00	.000*

* p < 0.000

Table 6 showed that the mean scores of severity of dyspnea occurring 2 – 3 hours after admission were significantly more severe than the severity of 48 hours and 72 hours after admission (p < 0.000).

Table 7 The comparison of knowledge to control dyspnea in congestive heart failure patients between pre intervention and post intervention by Wilcoxon Signed Ranks test (n = 20)

Knowledge to control dyspnea	Pre intervention		Post intervention		$\bar{X}$	Z	Sig.
	$\bar{X}$	SD	$\bar{X}$	SD	Diff		
1. Diet and water to control dyspnea	0.57	0.16	0.95	8.89	0.38	- 3.97	0.000**
2. Medication to control dyspnea	0.83	0.28	1.00	0.00	0.17	- 2.27	0.023*
3. Observing abnormal signs and symptoms and visiting the doctor	0.65	0.48	0.90	0.42	0.25	- 2.24	0.025*
4. Dyspnea control behavior	0.71	0.15	0.94	7.65	0.23	- 3.56	0.000**
Total	0.69	0.13	0.95	5.19	0.26	- 3.94	0.000**

* $p < 0.05$,

** $p < 0.000$

Table 7 showed that the mean scores of all items of knowledge comparison between pre - intervention and post - intervention were statistically significantly increased ($p < 0.02$ -0.000).

CHAPTER V

DISCUSSIONS

This study was a quasi-experimental study, one-group pre-post test design. It was applied to test the effects of a dyspnea relief program on severity of dyspnea and knowledge to control dyspnea in congestive heart failure patients. The samples were selected by the purposive sampling technique. Twenty participants of both sexes, who were admitted with dyspnea in congestive heart failure, were recruited based on the inclusion criteria during January-April 2003. This study is discussed in three parts as follows:

- Part I The severity of dyspnea and knowledge to control dyspnea
- Part II The results of the dyspnea relief program on dyspnea severity
- Part III The results of the dyspnea relief program on knowledge to control dyspnea

Part I: The severity of dyspnea and knowledge to control dyspnea

In this study, the samples had a mean age as 61.85 years (SD = 4.47) (Table 2). There were 60% females. In this study, most samples, 85% experienced dyspnea over 4 times in the past year. Most of them had to go to hospitals for the treatment of dyspnea and the mean of hospitalization was 9.65 days (SD = 7.86) (Table 2). This is similar to Parashall & Welsh's study (2001: 55) that dyspnea was a major cause of hospitalization. There were 75% of the sampling group who lived far away from the hospital so many hours driving and the long distance made the dyspnea worse. Half of the samples 50% waited for 1 or 2 days as the initial observation that caused severe dyspnea ($\bar{X} = 0.5$, SD = 0.5) (Table 5). In this study, the samples had been ill with heart disease with a mean time of 67.4 months (5.6 years) (SD = 121.50 months = 10.13 years) (Table 1). Prolonged heart disease caused severe and worse dyspnea. Kannel (1998: 1) harmoniously showed that prolonged heart disease generated severe

dyspnea and the mean period of patient's discharge and readmission was 27.95 days (SD = 37.45) (Table 2).

In this study, the mean of family monthly income was 6,575.30 baht (SD = 4,163.01). Patients' families had to spend a big portion of their monthly income in the admission period. The sixty-five percent of samples, had an elementary level of education. This education level was a major factor affecting an inappropriate life style for their heart diseases. For instance, patients favored salty foods: papaya salad with preserved fish. Those patients did not know that the salty food made heart disease worse and caused their readmission in the hospital. Carlson and Riegel (2001: 351-352) found that the related factors of uncontrolled heart failure in the patients and poorly managed dyspnea were low income and low education level. Ni, (1999: 1613) also presented that major risk factors predicting the readmission of patients with congestive heart failure were the lack of knowledge and insufficient support of self-care relating to heart diseases. Because of those, they may not know some appropriate life styles such as not eating salty foods, continuous medicine administration, daily body weight for detecting the change of symptom, or other abnormality and proper activities. Because of they were lack of knowledge, low education level, and low income. The study of Rich, et. al., (1995: 1190) relating to the limitations of the following-up period of patients with congestive heart failure demonstrated that the period with the highest risk of readmission was the first 30 days after the last discharge. Admission in the hospital caused to a lot of medical and hospitalization expenses, especially prolonged hospitalization (Carlson 2001: 351). In the United States of America, the average medical expense of patients who were admitted with congestive heart failure was 8,000 dollars/person (Carlson & Riegel, 2001: 351).

In this study 90% of samples used the right of universal coverage (the 30-baht scheme) for their medical expenses in each hospitalization without reimbursement from anywhere else. Hence, this mean increased medical expense for Thailand. Not only did it increase expenses of the country but also their families had to spend more money for transportation and hotels as they aimed to take care of and stand by patients in the hospitalized period.

In this study, 60% of the samples facing dyspnea by repositioning themselves to sit up in stead of lying down in supine position for abating the dyspnea. Carrieri &

Bjerklier (1986: 284-305) indicated that emphysema patients with severe dyspnea would take the sitting position aiming to relief the dyspnea. The samples relieved the dyspnea by deep breathing, (20%) stopping other activities, (15%) and taking a shower, (5%) respectively (Table 3). Most samples, 55% indicated dyspnea at midnight because they usually were in supine position where osmosis of external fluid into cells leading to increased heart volume and work including dyspnea occurred (Unnapirak, L., 2000: 200). Although 55% of samples reported dyspnea at midnight, there were 40% of samples who presented dyspnea at other variable times. Boonchuong's study (1996: 178) showed that dyspnea in congestive heart failure patients not only occurred at night but also happened when their hearts were unable to pump sufficient blood to supply the entire body. Pulmonary congestive blood retention and pulmonary edema followed because high pressure in the lung capillaries led the decreased oxygen-carbon dioxide transferring area in the alveoli. Worse dyspnea motivated patients breathed with the Sternocleidomastiod muscle (Breslin, et al., 1996: 271). Dyspnea normally occurred 2-3 hours after going to bed. Most samples awoke with their dyspnea and felt relief after sitting. Those were symptoms of congestive heart failure (Beare & Myers, 1990: 801). In the supine position, increased cardiac input caused increased blood volume in lung capillaries leading to high pressure in lung capillaries, and elevated osmosis of fluid into the alveoli and dyspnea. The sitting position reflected the declined cardiac input and decreased blood pressure of lung capillaries including increased capacity of lung, so dyspnea was relieved (Unnapirak, L., 2000: 206).

Part II: The results of the dyspnea relief program on dyspnea severity

In this study, most samples reported the worst dyspnea in 2-3 hours after admission in the wards ($\bar{X} = 64.5$, $SD = 7.61$). Practicing and receiving treatments and nursing care regarding the physician orders in the 48 hours period after admission, patients indicated moderate dyspnea level ($\bar{X} = 35.02$, $SD = 10.54$) and dyspnea severity respectively declined. At the 72 hour period of admission, patients presented slightly normal breathing ($\bar{X} = 10.36$, $SD = 5.79$) (Table 6).

The dyspnea severity in samples was relieved because of the physician's order of administration of medicines and intravenous fluid regarding the treatment. The action of those medicines with the initial administration assisted in relieving dyspnea by enhancing the myocardial efficiency and reducing fluid overload. Those medicines included digitalis for enhancing cardiac efficiency and increasing cardiac output, and diuretics for eliminating fluid edema, angiotensin to convert enzyme in patients for vasodilatation and diminishing the resistance force of capillaries. Thus, the actions of those medicines with the initial administration assisted in relieving dyspnea. The nursing care from health care team and the dyspnea relief program were the independent roles to be offered in order to, control and monitor patients to receive proper medicines for diminishing dyspnea and included using a proper Fowler's position with 45-60 degree head-up which aimed at diminishing cardiac output from the lower extremity to the upper lungs including increased vital capacity of lungs, obtaining bed rest for maintaining the low oxygen requirement of patients in the initial 24 hours of dyspnea presentation, and providing sufficient oxygen to patients as treatment for increasing the oxygen level in arterial blood and the program taught patients about deep abdominal breathing to avoid valsava mannuver. After 48 hours dyspnea was relieved to enlarge lung expansion and enhance respiratory muscular strength.

Nurse advised and took care of patients with heart disease about suitable activities and motivated patients and family members to realize the significance of a low salt diet.

In this study, at 48 and 72 hours after admission and after receiving treatments, intensive nursing care, and the dyspnea relief program samples exhibited decreased severity of dyspnea. If samples continuously obtained the proper practice and lifestyle regarding the physician's order and the dyspnea relief program after discharge, they may eliminate dyspnea and readmission.

The analysis of the means of severity of dyspnea in pre and post proper treatment, rigorous nursing care and the dyspnea relief program determined the statistical difference on severity of dyspnea in all the above with the statistical level of significance of 0.000 ($p < 0.000$). All those led to decreased pulmonary fluid retention and the efficiency of the myocardium enhancing sufficient cardiac output and blood

supply for the whole body, convenient cardiac input, and a decline in pulmonary blood retention (Unnapirak, L., 2000: 204-206). Those motivated decreased dyspnea on a few hours after admission at a statistically significant level.

Part III: The results of the dyspnea relief program on knowledge to control dyspnea

In this study, the most samples, 90% had no knowledge about proper diet and most of their food had been cooked with all kinds of sauce. Forty-five percent of samples thought that drinking a lot of water would lead to much voiding because it was the way normal people acted for a healthy life but it is contra indicated in people with congestive heart failure. Fifty-five percent of samples did not realize how important the restriction of fluid intake to one liter per day was. Patients reported that they would drink a lot of water when they felt thirsty and they did not believe about the harmfulness of an overload of fluid intake. Pre-intervention raw scores of diet and water to control dyspnea were 56 from a full score of 100 and post-intervention raw scores were 95 ($\bar{X} = 0.57$, $SD = 0.16$) (Table 7). All item scores before receiving the dyspnea relief program were lower than after receiving the dyspnea relief program ($\bar{X} = 0.69$, $SD = 0.13$) ($\bar{X} = 0.95$, $SD = 5.19$) (Table 7).

In this study, the samples gained an increased knowledge score ($\bar{X} = 0.95$, $SD = 5.19$) (Table 7) after receiving the dyspnea relief program consisting of rigorous nursing care and supervision about heart disease and proper lifestyle. It was harmonious with the study of Bennettes & Perkins (2001: 177) that the supervision of heart diseases enhanced patients to gain knowledge of proper activities and life style. Boonchuong's study (1998: 173) relating to nursing care promoted knowledge of self-care with congestive heart failure patients and family members indicated that nurses should pay attention to supervise patients and families to gain practical self-care and good understanding about heart diseases, prognosis, treatment, nursing care and proper diet and activities. The samples demonstrated an increased knowledge score with the post dyspnea relief program because the investigator advised them following the individual's basic knowledge. The assessment of patient's knowledge before

attending the dyspnea relief program made patients gain more understanding about the causes of dyspnea and possible practices under the strict protocol of nursing care and nurse's advice. The post-test score of patient's knowledge showed a higher mean of knowledge score ($\bar{X} = 0.95$, $SD = 5.19$) (Table 7). Increased knowledge score reflected improved knowledge and more understanding of patients for self-care in all categories diet and water intake, medicine administration, monitoring subjective abnormality, and behaviors to control dyspnea. Similarly, Jenny (1998: 478) reported that the process of learning in people was individual regarding fundamental education background and intelligence of them. Effective learning resulted from multi-methods and time. In a crisis situation, the learning process has limitations. Patients would gain more knowledge during their stable period and following-up period. Motive, experience and readiness of learners including participation would enhance effective learning (Jenny, 1987: 478). Individuals during pre-test and before applying the dyspnea relief program represented the different knowledge of individuals in different categories. Those pointed out the cause of recurrent dyspnea and readmission in the samples because they had insufficient knowledge for proper practice and lifestyle. Ni, (1999: 1613) stated that patients with congestive heart failure had readmission because of their lack of knowledge for a proper life style. The investigator provided a pre-test of knowledge for samples dividing them into each category and fulfilling individual needs with clear explanations and two-way communication. Teaching materials were used such as pictures, a flip chart, and practice the handbook for patients with congestive heart failure and educational leaflets. A heart for life pamphlet produced by the Ministry of Public Health to promoted easy remembrance. Proper effective teaching for individual demands to elevated essential knowledge of patients. Gryetz Thomas and Fomenko (2000: 167) stated that acknowledging patients involved with heart diseases, congestive heart failure, treatment, encouragement, proper activities and self-care was very significant. In the analysis of this study, most samples exhibited statistically different mean of knowledge scores for controlling dyspnea between the pre and post dyspnea relief program. The samples with the post dyspnea relief program showed an increased mean of knowledge scores in the diet and water intake category and to control dyspnea behaviors categories with the statistically significant level of 0.01 ($p < 0.01$). The mean of knowledge scores in medicine administration

and monitoring subjective abnormality categories, showed that an increase with a statistically of significance level of 0.05 ($p < 0.05$). Regarding the health education system of medical staff, they mostly educated patients about hospital's rules and general information such as a proper and a low salt diet, controlling water intake by drinking water from the arranged bottle, keeping track of extra fluid intake, and measuring urine output by keeping it in the urinal bottle. They offered an insufficient educational period, no pre- and post-test in each category, with no attention to individual knowledge of patients, and no concern about patients readiness to learn. Hence, the results of ineffective health education were illustrated by the unclear understanding of patients. In a crisis situation with severe dyspnea, patients might not be ready to learn. The health education program in the hospital was normally performed for patients who knew the exact operative appointment. Health care team would inform the patients a day in advance to call family members to join the program. Patients and families would be arranged in the classroom at the 9th floor in the surgical cardiological ward. Assigned nurses were experts in teaching related to the preparation of pre-open heart operations, anesthetics techniques, techniques of post-operative recovery, and demonstrated CCU caring by a flip chart, the pictures and VDO tape to explanation, and proper post-operative activities. During the teaching, the handbook that were given out to patients and families did not cover the essential knowledge regarding the design of the dyspnea relief program of the investigator. Consequently, the combination of this dyspnea relief program and the health education program of the hospital may be beneficial for protection from recurrent dyspnea and readmission from congestive heart failure.

CHAPTER VI

CONCLUSION

This research was conducted as a quasi-experimental research aiming to study the results of the dyspnea relief program on severity of dyspnea and knowledge to control dyspnea in congestive heart failure patients. The sampling group consisted of 20 new patients with congestive heart failure who were admitted in the 7th floor male medical ward, and the 6th floor female medical ward, at the Chest Disease Institute, Nonthaburi Province between January 23 to April 20, 2003. They were qualified with the inclusion criteria sample selection.

The instruments were divided into 4 parts as follows:

1. The assessment form of demographic data for gathering personal information and the questionnaire for collecting dyspnea experience created by the investigator.
2. The assessment form the severity of dyspnea in congestive heart failure patients with Visual Analogue Scale with 7 questions produced by the investigator.
3. The pre-test and post-test for assessing previous knowledge of controlling dyspnea in congestive heart failure patients with 18 questions was produced by the investigator following the literature review.
4. The dyspnea relief program consisted of nursing practice and an educational plan in congestive heart failure patients and families.

The assessment form of demographic data, questionnaire of dyspnea experience, the assessment form of dyspnea severity level, the pre-test and post-test of knowledge to control dyspnea, the handout of proper practice in congestive heart failure patients, and the dyspnea relief program were checked for validity by 3 experts (Appendix A). Then, those were tested with 10 patients who had the same qualifications as the samples for reliability. The reliability of the pre-test and post-test of knowledge to control dyspnea was 0.53. Most samples were female with the mean age of 61.85 years. The youngest age was 18 years and the highest age was 73 years. Most samples were married and lived in rural areas with a mean monthly income of

6,575.30 baht. Most samples had an elementary level of education. The lowest and the highest monthly incomes were 1,000 baht and 30,000 baht, respectively. Duration of illness with heart disease showed the shortest as 2 months and the longest as 312 months (26 years). The mean of illness duration with congestive heart failure was 67.4 months (5+ years). The mean of hospitalized duration was 9.65 days. The maximum hospitalized duration was 27 days. The duration of last admission after hospital discharge was 10 days. The longest duration of readmission since the last discharge was 150 days. Most samples, 85% had dyspnea experience and 75% of them had dyspnea more than four times in the past year. Eighty-five percent of patients with occurred dyspnea required admission. Sixty percent of samples applied the sitting position for relieving the dyspnea and a later method was deep abdominal breathing. Dyspnea mostly happened with patients (55%) after midnight and it forced them to sit with tired breathing. Fifty percent of the cause of dyspnea was long distance walking. Ninety percent of samples with dyspnea had female care-providers.

The comparison of dyspnea severity in congestive heart failure patients among the initial 2-3-hour admission, pre treatment and nursing care from the health care team, and pre dyspnea relief program indicated that the 2-3 hours admission had the highest dyspnea severity level. Then 48 and 72 hours after admission, and after having treatment with nursing care and the dyspnea relief program from the health care team including physicians, and nurse they showed a decreased dyspnea severity level. From the statistical analysis in all three phases, the mean of dyspnea severity level declined with the statistical significant level of $p < 0.000$ in all symptoms of dyspnea.

The comparison of the knowledge scores to control dyspnea in congestive heart failure patients between 48 hours and 72 hours after admission periods, with treatment and nursing care, combined with the dyspnea relief program showed that the 72 hour period showed increased knowledge scores with the statistical level of significance of $p < 0.001$, $p < 0.05$, respectively.

Implications

From the result of this study, most of the samples lacked knowledge about diet control and water intake restriction. Nurses should teach the congestive heart failure patients to avoid fish-sauce, soy-sauce, monosodium glutamate, or Chinese celery, which are salty and will increase cardiac work load. In addition, not limiting water to one litre per day, resulted in unrelieved dyspnea. Effective learning resulted from multi-methods and time. In a crisis situation, the learning process has limitations. A pre-test of knowledge and fulfilling individual needs with clear explanations and two-way communication was provided. Teaching materials were pictures, a flip chart and practice handbook and education leaflets for congestive heart failure patients. Nurses have an active role in dyspnea management according to physician's order and an independent role for the relief of dyspnea. Fowler's position head lifted to 45-60 degree can increase lungs expansion, bed rest in the first 24 hours can decrease metabolic demand, teaching deep abdominal breathing gives dyspnea relief, resulting in increase gas exchange in the lungs, avoiding salty food can decrease cardiac workload and so can avoiding excessive exertion.

Recommendations for further study

The recommendations for further study are as follow:

1. A further comparative study between the experimental and control groups should be conducted.
2. A larger sample size with random sampling selection and a longer following-up period, should be studied for prolonged monitoring of self-care ability and knowledge application at home. Readmission after receiving the dyspnea relief program and dyspnea severity level need to be recorded.
3. Participation of families will be significant for excellent care and systematic evaluation of need.
4. This program expected to teach both patients and family members who could help and encourage patients at home. For instance, families of patients should

strictly make them have a low salt diet and separately prepare their food even if a low salt diet was tasteless. Effective control on the increased heart work by controlling a low salt diet for patients with heart diseases will promote relieved dyspnea.

5. Education and supervision about related issues to patients and families should be conducted in a convenient way and many communication channels used such as establishing a handbook relating to proper practice on dyspnea with congestive heart failure patients. This handbook should emphasize each topic such as diet, medicines, signs and symptoms abnormality, and adaptation of proper life style. This education should also be performed in the form of VDO tape for patients after crisis.

Limitations

Owing to the difficulty in finding and matching samples, who had to have acute dyspnea, as well as the limited time of studying. Because it was a small sample size, the sampling selection in this study was not a random selection. Hence, this result is not expect to the representative of a large population nor a generalization.

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Appendix A

List of Expert

1. Dr. Kriengkrai Hengrusamee
Chief division of cardiology and
director of noninvasive laboratory
The Chest Disease Institute, Nonthaburi
2. Associate Professor Achara Techaritpitak
Department of Surgical Nursing,
Faculty of Nursing, Mahidol University
3. Kanogporn Jamsomboon
Head Nurse Cardiac Care Unit
The Chest Disease Institute, Nonthaburi



Appendix B Informed Consent Permission for Data Collecting

หนังสือแสดงเจตนายินยอมเข้าร่วม โครงการวิจัยทางการแพทย์

วันที่..... เดือน..... พ.ศ.....

ข้าพเจ้า..... อายุ.....ปี อาศัยอยู่บ้าน
เลขที่.....
ถนน.....ตำบล.....อำเภอ.....
อ.....
จังหวัด..... โทรศัพท์..... โทรสาร..... ขอแสดงเจตนายินยอมเข้าร่วม โครงการวิจัยเรื่อง ผล
ของการใช้โปรแกรมการบรรเทาอาการหายใจลำบากต่อระดับความรุนแรงของอาการหายใจลำบาก และความรู้เพื่อควบคุมอาการ
หายใจลำบากในผู้ป่วยภาวะหัวใจล้มเหลวที่รับไว้ในสถาบันโรคทรวงอก

โดยข้าพเจ้าได้รับทราบเกี่ยวกับรายละเอียดของโครงการ ดังต่อไปนี้

วัตถุประสงค์ของการวิจัย เพื่อศึกษาเปรียบเทียบอาการหายใจลำบากในผู้ป่วยภาวะหัวใจล้มเหลวก่อนให้โปรแกรมการ
บรรเทาอาการหายใจลำบาก และหลังได้รับโปรแกรมการบรรเทาอาการหายใจลำบากที่รับไว้ในสถาบันโรคทรวงอก

ประโยชน์ที่คาดว่าจะได้รับจากการวิจัย เป็นแนวทางปรับปรุงด้านบริการสุขภาพและให้ความรู้แก่ผู้ป่วยที่มีอาการหายใจ
ลำบากในภาวะหัวใจล้มเหลวและ พัฒนาศักยภาพของผู้ป่วยในการจัดการกับอาการหายใจลำบากได้เหมาะสมยิ่งขึ้น และ
ส่งเสริมความเข้าใจแก่พยาบาลวิชาชีพและผู้สนใจในการให้คำแนะนำแก่ผู้ป่วยอย่างมีประสิทธิภาพ

ผู้ร่วมโครงการวิจัยจะไม่ได้รับผลข้างเคียงหรือถูกรังแกไม่พึงประสงค์หรืออันตรายจากการวิจัย เนื่องจากไม่มีการทดลอง
ใดๆ แก่ผู้ร่วมโครงการวิจัย

รายละเอียดและขั้นตอนที่ผู้ร่วมโครงการวิจัยจะได้รับการปฏิบัติ จะมีการสัมภาษณ์ข้อมูลส่วนบุคคล ได้แก่ อายุ เพศ
สถานภาพสมรส การศึกษา อาชีพ รายได้ ระยะเวลาของการเจ็บป่วยเป็นโรคหัวใจ การรักษา ประสบการณ์การเกิดอาการหายใจ
ลำบาก การเข้ารับการรักษาในโรงพยาบาล โดยใช้ข้อมูลจากแฟ้มประวัติการเจ็บป่วยประกอบด้วย ใช้เวลาสัมภาษณ์ประมาณ 5 นาที
และถ้ามีข้อสงสัยสามารถโทรถึงผู้ศึกษาได้ตลอด 24 ชั่วโมงที่ 02-216-0836 หรือ 01-834-8574

หากผู้ศึกษามีข้อมูลเพิ่มเติมทั้งด้านประโยชน์และโทษที่เกี่ยวข้องกับการวิจัยนี้ จะแจ้งให้ข้าพเจ้าทราบอย่างรวดเร็วโดยไม่
ปิดบัง

ข้าพเจ้ามีสิทธิที่จะขอถอนการเข้าร่วมโครงการวิจัยโดยไม่ต้องแจ้งให้ทราบล่วงหน้า โดยการงดการเข้าร่วมการวิจัยนี้จะไม่
ผลกระทบต่อการใช้บริการหรือการรักษาที่ข้าพเจ้าจะได้รับแต่ประการใด

ข้าพเจ้าได้รับทราบข้อมูลของโครงการข้างต้น ตลอดจนข้อดี ข้อเสีย ที่จะได้รับการเข้าร่วมโครงการในครั้งนี้และ
ข้าพเจ้ายินยอมที่จะเข้าร่วมโครงการดังกล่าว โดยขอให้ผู้ศึกษาการเปิดเผยชื่อ ประวัติ ตลอดจนข้อมูลที่เกี่ยวข้องกับข้าพเจ้าแก่ผู้อื่น
ได้รับทราบ

ลงชื่อ.....ผู้ให้ความยินยอม/ผู้แทน
(.....) โดยชอบธรรม (ระบุความเกี่ยวข้อง)
วันที่.....

ลงชื่อ.....พยาน
(.....)

ลงชื่อ.....พยาน



คณะกรรมการจริยธรรมเพื่อการวิจัยสถาบันโรคทรวงอก
กรมการแพทย์
กระทรวงสาธารณสุข

โครงการวิจัย: ผลของโปรแกรมการบริหารอาการหายใจลำบากต่อระดับ
ความรุนแรงของอาการหายใจลำบากและความรู้เพื่อควบคุม
อาการหายใจลำบากในผู้ป่วยภาวะหัวใจล้มเหลว

ผู้ดำเนินการวิจัย: นางนุชรินทร์ ชัดวีวิชัย
นักศึกษาระดับปริญญาโท สาขาสถาปัตยกรรมบัณฑิต
สาขาการพยาบาลผู้ใหญ่ แผนก
คณะพยาบาลศาสตร์ มหาวิทยาลัยมหิดล

สถานที่ทำการวิจัย: สถาบันโรคทรวงอก

คณะกรรมการจริยธรรมเพื่อการวิจัยสถาบันโรคทรวงอก กรมการแพทย์
กระทรวงสาธารณสุข ขออนุมัติในแจ้งจริยธรรมให้ดำเนินการศึกษาวิจัยเบื้องต้นได้

.....
(นายแพทย์เจริญ ชูโรตติการ)

ประธานกรรมการ

.....
(นายแพทย์ธรรมรัฐ จันทร์แสนสุวรรณ)

เลขานุการ

รับรองวันที่ 15 มกราคม 2546 ถึง 23 เมษายน 2546



နိ ဖဝ.၁၁. ၁၇၂၄ ၁၂၅၄၅

คณะวิทยาศาสตร์ มหาวิทยาลัยมหิดล
 บางกอกน้อย กรุงเทพฯ 10700

๑๓ ธันวาคม ๒๕๔๕

เรื่อง ส่งโครงการวิจัยที่เกี่ยวกับการทดลองในมนุษย์มาเพื่อพิจารณาให้คำรับรอง

เรียน ผู้อำนวยการโรงพยาบาลโรคทอง

ด้วย นางนุชรินทร์ จักรวิชัย นักศึกษาหลักสูตรพยาบาลศาสตรมหาบัณฑิต สาขาการพยาบาลผู้สูงอายุ แผนก ข คณะพยาบาลศาสตร์ มหาวิทยาลัยมหิดล กำลังทำสารนิพนธ์เรื่อง “ผลของโปรแกรมการบรรเทาอาการหายใจลำบากที่ระดับความรุนแรงของอาการหายใจลำบาก และความรู้ในการดูแลตนเองเพื่อควบคุมอาการหายใจลำบากในผู้ป่วยภาวะหัวใจวายเฉียบพลัน” ของผู้ปวยที่รับไว้ในโรงพยาบาลโรคทรวงอก

คณะพยาบาลศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย ขอเสนอคณะกรรมการสิทธิมนุษยชนเกี่ยวกับการวิจัย
ในมนุษย์ของโรงพยาบาล เพื่อพิจารณาให้คำรับรอง พร้อมนี้ได้ส่งแบบเสนอโครงการวิจัยและเอกสาร
ประกอบมาด้วยแล้ว

จึงรีบมาเพื่อโปรดคำนินการต่อไปด้วย จักเป็นพระคุณยิ่ง

ขอแสดงความนับถือ

(รองศาสตราจารย์ ดร.สาธิต พิเมียร)

รองประธานฯ ปฏิบัติราชการแทน

ประธานคณะกรรมการบริหารหลักสูตรพยาบาลศาสตรมหาบัณฑิต

หลักสูตรปริกขญาโท โทร. 0-2419-7466-80 คู่ล 1411 โทรสาร 0-2412-8415

(1) *Penicillium notatum* (1946) (2) *Penicillium notatum*
Penicillium notatum
Penicillium notatum



Appendix C

Instrument

เครื่องมือที่ใช้ในการเก็บรวบรวมข้อมูล

ส่วนที่ 1 แบบบันทึกข้อมูลส่วนบุคคลและแบบสอบถามประสบการณ์ของอาการหายใจลำบาก

1. แบบบันทึกข้อมูลส่วนบุคคล

คำชี้แจง : บันทึกข้อมูลของผู้ป่วยลงในช่องว่างและทำเครื่องหมาย ใน ตามข้อความที่เป็นจริง

1. เพศ ชาย หญิง

2. อายุ ____ ปี ศาสนา ____ เชื้อชาติ ____

3. สถานภาพสมรส

คู่ โสด หม้าย หย่า แยก

.....

.....

9. การรักษา

ยาที่ได้รับ

การผ่าตัด

วันที่ได้รับการผ่าตัด

2. แบบสอบถามประสบการณ์ของอาการหายใจลำบาก

1. ประสบการณ์ที่เคยมีอาการหายใจลำบากใน 1 ปีที่ผ่านมา

เคย

ไม่เคย

2. ถ้าเคยมีอาการหายใจลำบากใน 1 ปีที่ผ่านมา เกิดขึ้นกี่ครั้ง

1 ครั้ง

2 ครั้ง

3 ครั้ง

4 ครั้งขึ้นไป

.....

.....

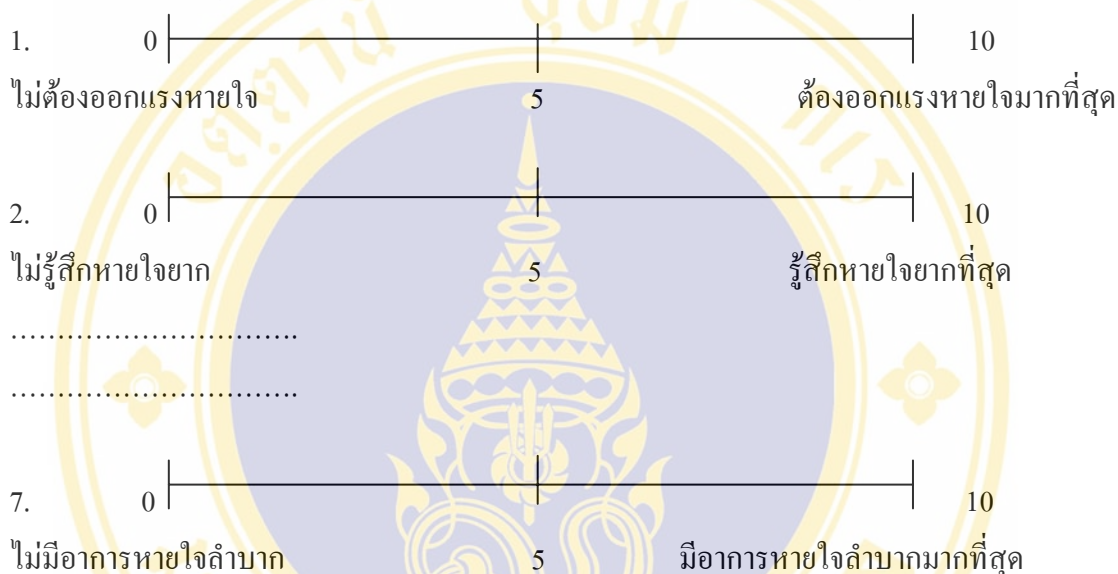
9. ผู้ที่ช่วยดูแลท่านขณะเกิดอาการหายใจลำบาก

มี

ไม่มี

ส่วนที่ 2 แบบประเมินระดับความรุนแรงอาการหายใจลำบากในผู้ป่วยภาวะหัวใจล้มเหลว ประเมินครั้งที่ 1, 2, 3

คำชี้แจง แบบประเมินนี้มีจุดมุ่งหมายเพื่อให้ทราบถึงระดับอาการหายใจลำบากที่รุนแรงที่สุดใน 2-3 ชั่วโมงที่ผ่านมา โปรดทำเครื่องหมาย ลงบนเส้นตรงที่ใดที่หนึ่งซึ่งแสดงระดับความรุนแรงของอาการหายใจลำบากที่รุนแรงของท่าน โดยปลายสุดของเส้นด้านซ้ายหมายถึง ไม่มีอาการหายใจลำบาก และปลายสุดของเส้นด้านขวา หมายถึง มีอาการหายใจลำบากมากที่สุด



ส่วนที่ 3 แบบประเมินความรู้เพื่อควบคุมอาการหายใจลำบากในผู้ป่วยภาวะหัวใจล้มเหลว ครั้งที่ 1, 2

คำชี้แจง แบบสอบถามนี้มีจุดมุ่งหมายเพื่อให้ทราบความรู้เพื่อควบคุมอาการหายใจลำบาก กรุณาตอบ ใช่ หรือ ไม่ใช่ในแต่ละข้อตามความเป็นจริงสำหรับตัวท่าน (กรุณาตอบทุกคำถาม)

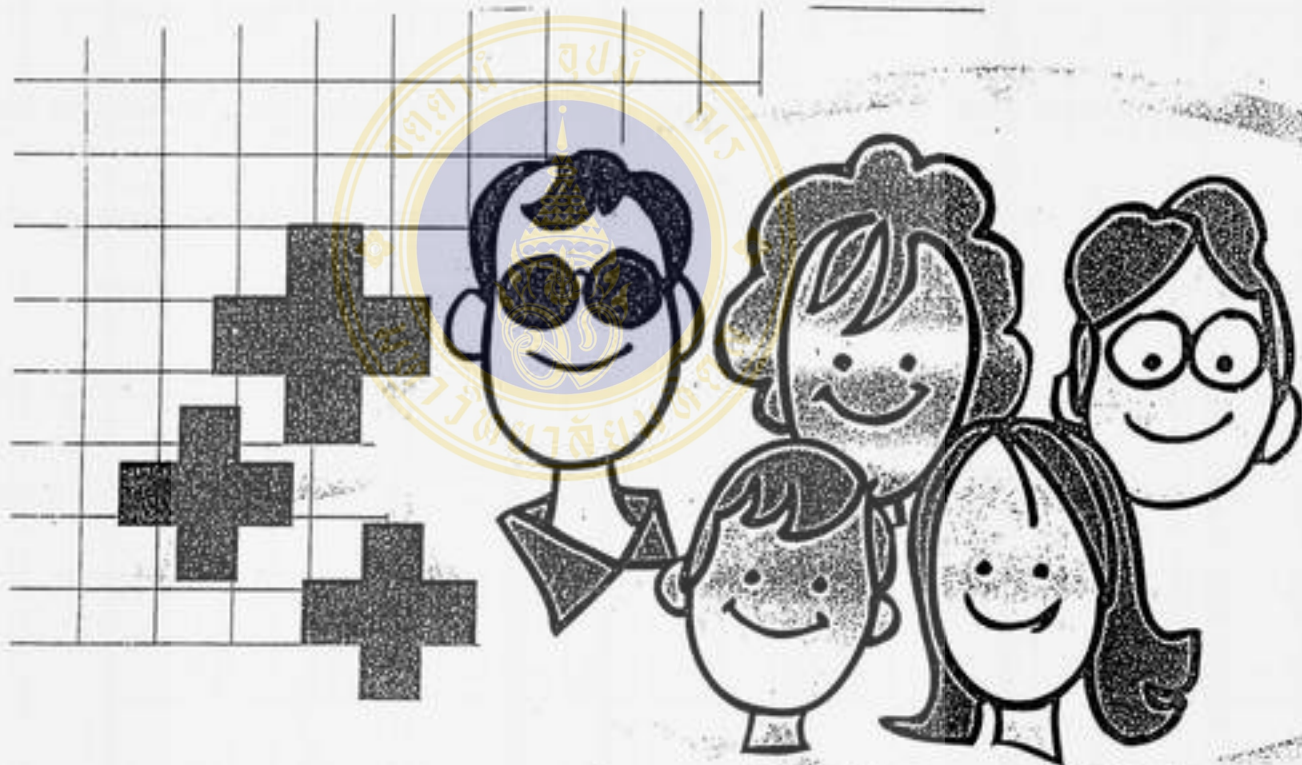
คำถาม	ครั้งที่ 1, 2	
	ใช่	ไม่ใช่
1. อาหารที่ท่านรับประทานมักผ่านขบวนการปรุงแต่งด้วยผงชูรส, ซิอิ๊ว, น้ำปลา, กะปิ, ผงฟู		
2. ท่านหลีกเลี่ยงอาหารที่มีรสเค็ม ของแห้ง และของหมักดองทุกชนิด		
.....		
.....		
17. ท่านคิดว่าอาการหายใจลำบากที่เกิดขึ้นจากการปฏิบัติตนไม่เหมาะสมกับสถานะของโรคที่ท่านเป็นอยู่		
18. การดื่มเหล้าและสูบบุหรี่ยังคงปฏิบัติได้เหมือนตอนที่ไม่มีป่วย		



วัตถุประสงค์ เฉพาะ	เนื้อหา	กิจกรรม	สื่อการ สอน	ประเมิน ผล
- ให้ผู้ ป่วยมี ความรู้ใน การ ปฏิบัติตัว ขณะอยู่ โรง พยาบาล ดังนี้ -การนั่ง อยู่ในท่า ศีรษะสูง 45-60 องศา ตัว ตรง -ดูแลให้ ได้รับ ออกซิเจน ตามแผน การรักษา ไม่ให้สาย หลุดจาก จมูก -นอนพัก นิ่งๆ ไม่ เคลื่อนไหว	อาการหายใจลำบากเกิดขึ้นได้อย่างไร อาการหายใจลำบากเกิดจากประสิทธิภาพการทำงานของหัวใจลดลง ทำให้ปอดมีการคั่งของเลือด และต่อมามีน้ำในถุงลมปอด ทำให้การแลกเปลี่ยนก๊าซลดลง จึงต้องออกแรงในการหายใจเพิ่มขึ้น ระยะที่ 1 24 ชั่วโมงแรก ประเมินความรุนแรงของอาการหายใจลำบาก 2-3 ชั่วโมงหลังเข้าพักรักษาในหอผู้ป่วย และดูแลให้การพยาบาลเพื่อบรรเทาอาการหายใจลำบากดังนี้ 1. จัดทำให้ผู้ป่วยนั่งศีรษะสูง 45-60 องศา ตัวตรง ใช้หมอนรองบริเวณศีรษะ ต้นคอ และแขนทั้ง 2 ข้าง เพื่อลดการไหลกลับของเลือดเข้าหัวใจและเป็นการเพิ่มพื้นที่ภายในปอดให้ขยายตัวได้มากขึ้นทำให้กระบังลมลดลง และการแลกเปลี่ยนก๊าซดีขึ้น 2. ดูแลให้ผู้ป่วยได้รับออกซิเจนตามแผนการรักษา ถ้าเป็นแบบหน้ากากไม่ควรคับหรือหลวมเกินไปให้ได้ออกซิเจนเพียงพอ 3. แนะนำผู้ป่วยให้นอนพักบนเตียง 24 ชั่วโมงแรก เพราะถ้ามีการเคลื่อนไหวมาก ร่างกายจะต้องการออกซิเจนมากขึ้น ทำให้อาการหายใจเหนื่อยเพิ่มมากขึ้น 4. ดูแลให้ผู้ป่วยได้รับสารน้ำและให้ยาตามแผนการรักษา 5. อธิบายการทวงน้ำดื่มและการเก็บเท	แนะนำตนเอง บอกวัตถุประสงค์ให้ผู้ผู้ป่วย โดยการจัดทำให้ผู้ป่วยนั่งศีรษะสูง 45-60 องศา หนุนหมอนบริเวณ ศีรษะ คอ และแขนทั้ง 2 ข้าง -ดูแลให้ได้รับออกซิเจน -แนะนำให้นอนพักบนเตียง	-จัดทำให้ผู้ป่วย	ผู้ป่วยปฏิบัติตามโดยนั่งศีรษะสูง 45-60 องศา -ดูแลสายออกซิเจนไม่ให้หลุด -นอนพักอยู่บนเตียงวางแขนนิ่งๆ -ผู้ป่วยปฏิบัติตามได้ถูกต้อง



♥ โปรแกรมการบรรเทาอาการหายใจลำบากในผู้ป่วยภาวะหัวใจล้มเหลว ♥



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1 แสดงภาพผู้ชายผู้หญิงและเด็ก

2. ปอดและหัวใจ

อาการหายใจลำบากเกิดขึ้นได้อย่างไร

อาการหายใจลำบากเกิดจากประสิทธิภาพการทำงานของหัวใจลดลงทำให้ปอดมีการคั่งของเลือด และคั่งมีน้ำในถุงลมปอด ทำให้การแลกเปลี่ยนก๊าซออกซิเจนและคาร์บอนไดออกไซด์ลดลง

ผู้ป่วยจึงต้องออกแรงในการหายใจเพิ่มขึ้น

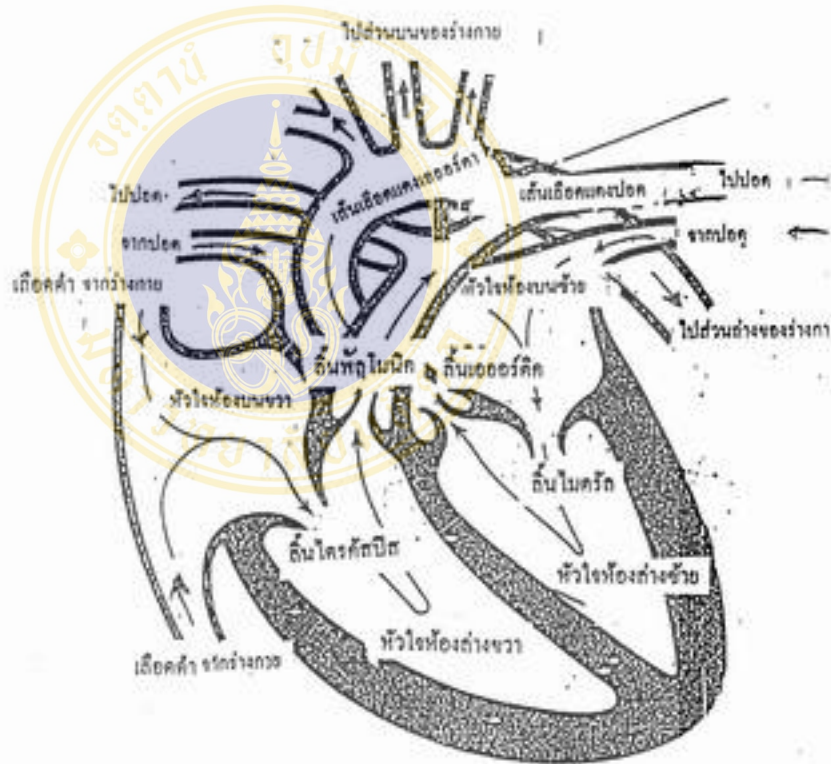


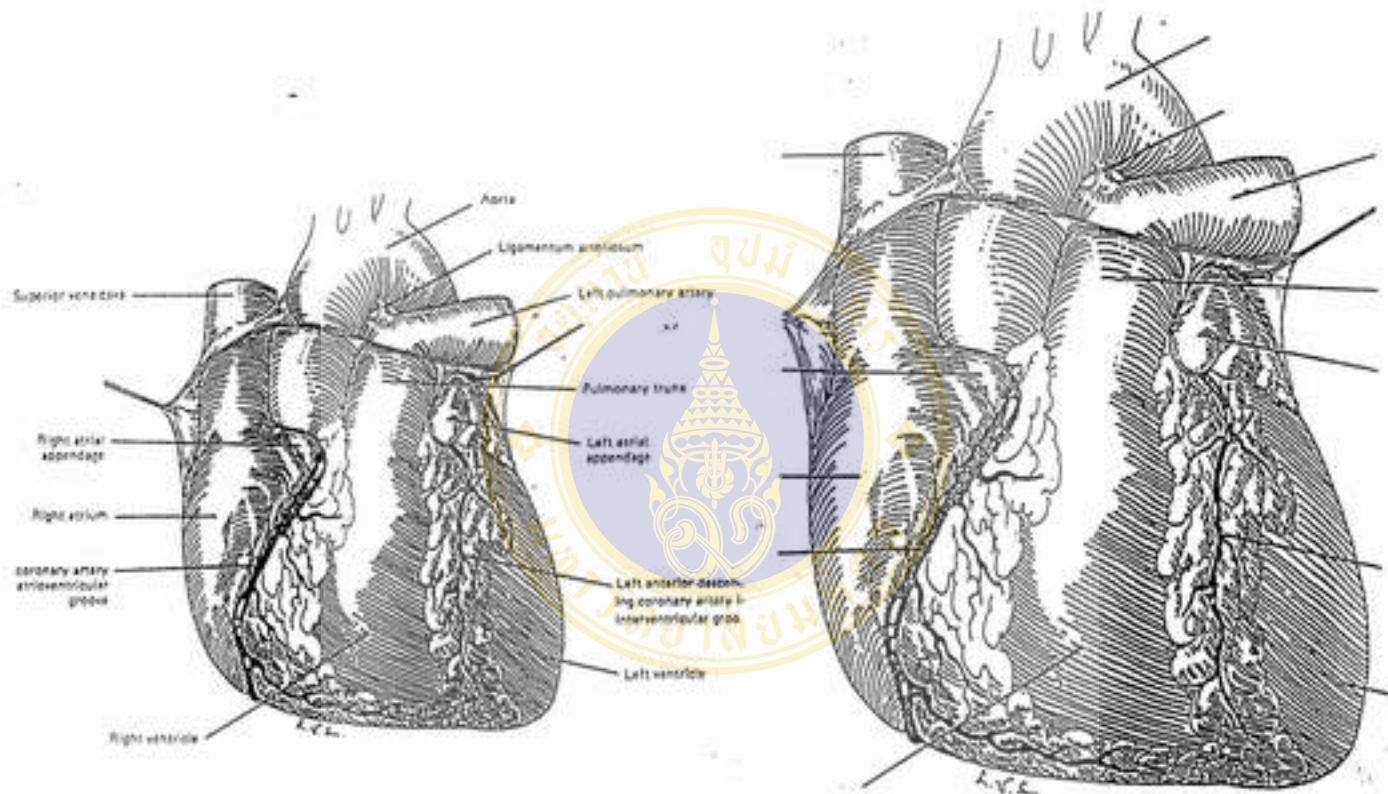
3

หัวใจ

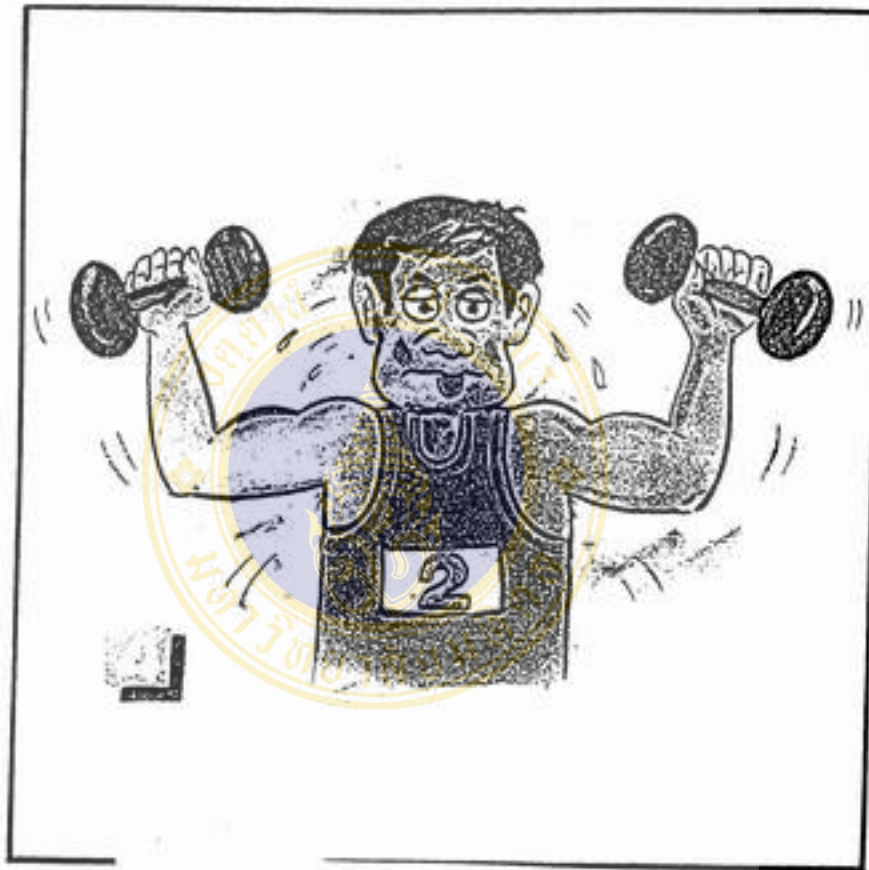
หัวใจคือชีวิต

ท่านดูแลสุขภาพหัวใจหรือยัง!



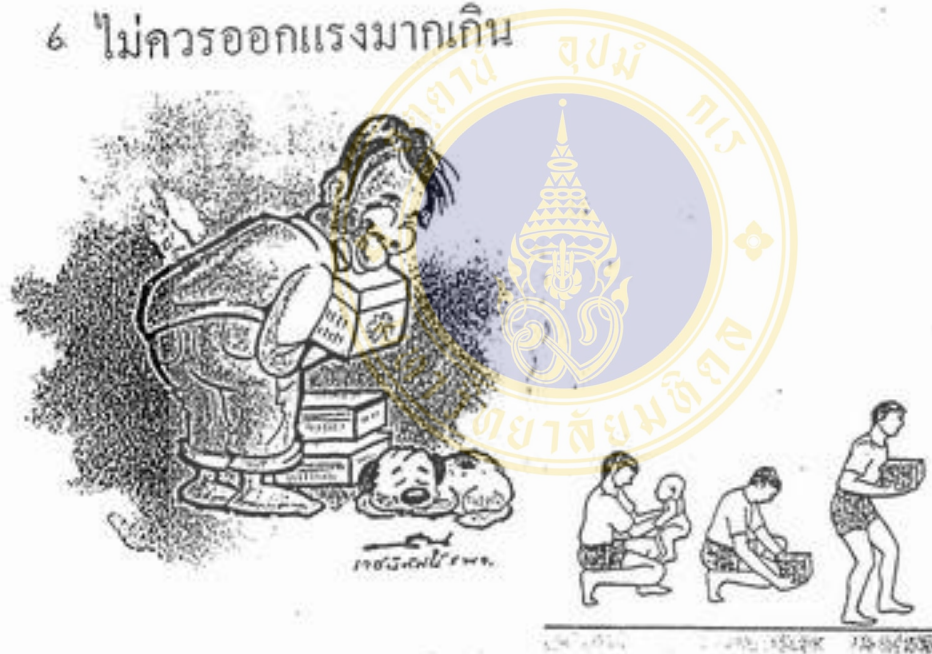


4. ความแตกต่างของหัวใจปกติและหัวใจล้มเหลว



5 ไม่ควรออกกำลังกายมากเกินไป

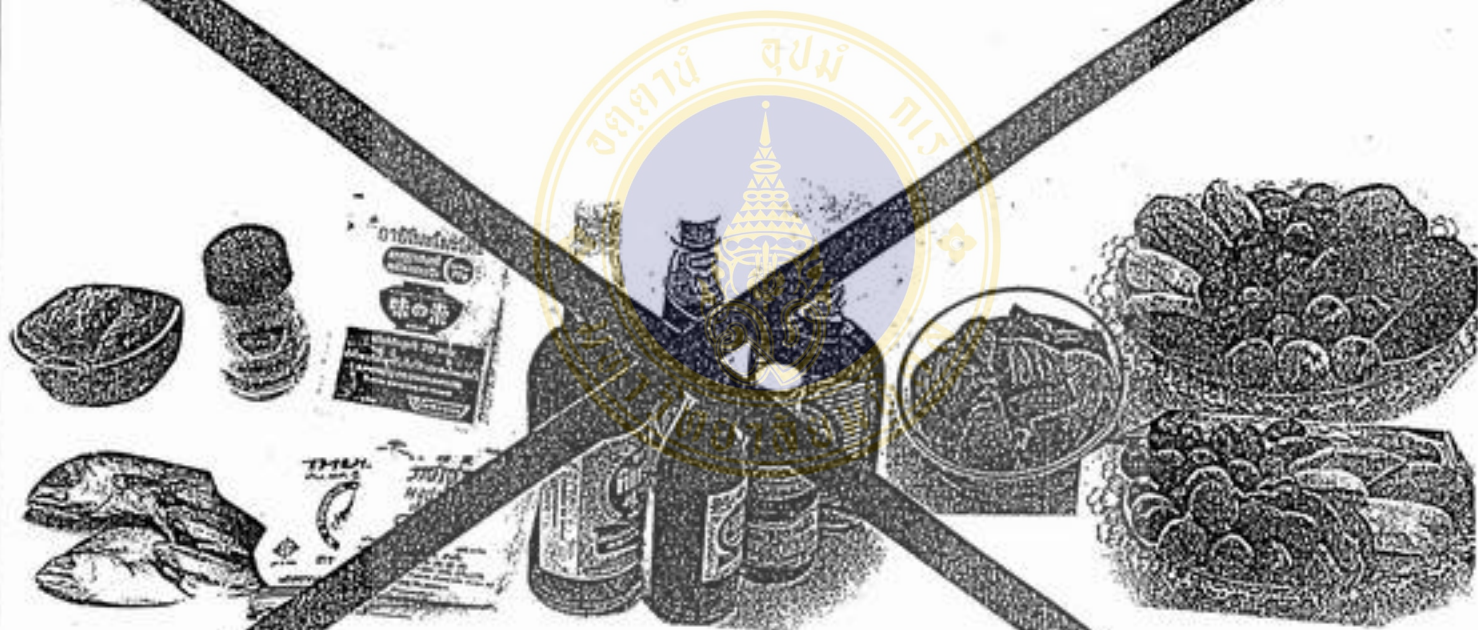
6 ไม่ควรออกแรงมากเกินไป



๗ อาหารที่ควรรับประทาน



๘ อาหารที่ไม่ควรรับประทาน



ลดการกินเกลือไม่เกิน 1 ช้อนชาต่อวัน
ควรหลีกเลี่ยงอาหารรสเค็ม ของแห้ง ของหมักดองทุกชนิด

๔ รับประทานยาอย่างสม่ำเสมอ



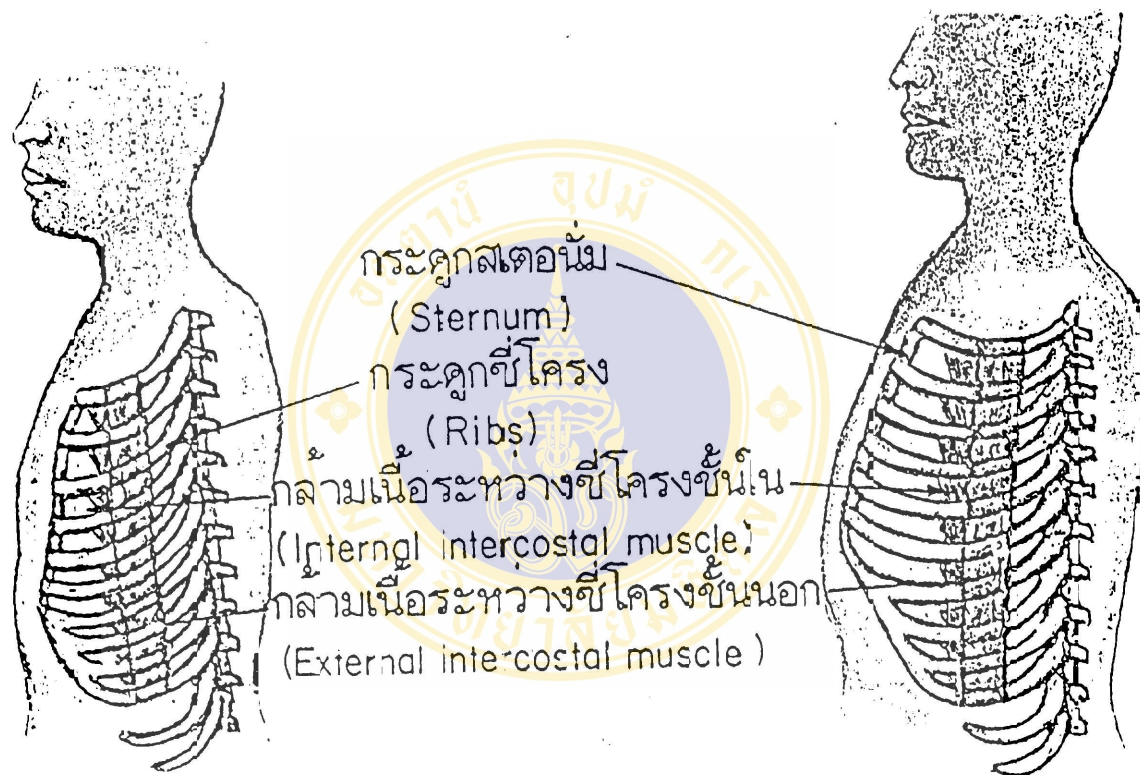
ไม่ปรับเปลี่ยนและลดขนาดยาเอง

- ยาที่รับประทานมีกลิ่นเหม็น
- รับประทานเวลาใดบ้าง
- อาการผิดปกติจากการรับประทานยา



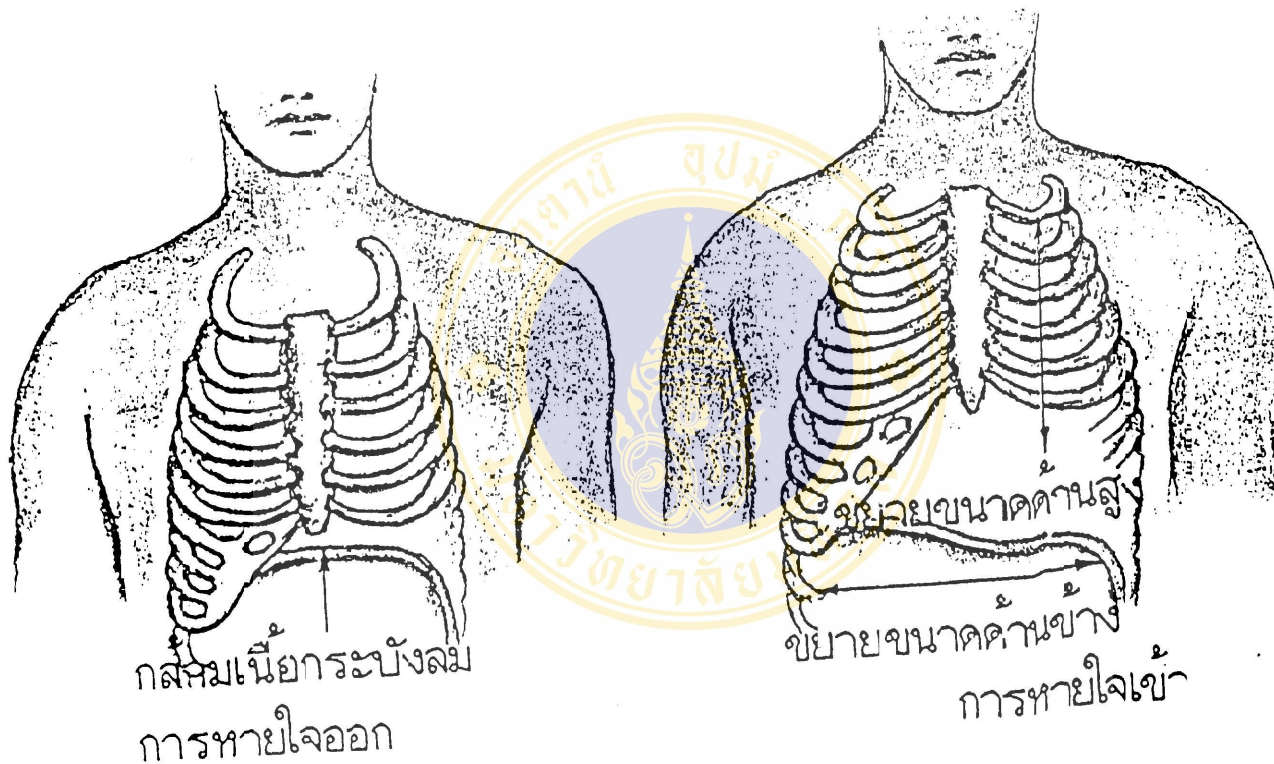
10 ท่านปฏิบัติตัวอย่างใดเมื่อเกิดอาการหายใจลำบาก?

- การจัดทำศีรษะสูง 45-60 องศา
- การหยุดทำกิจกรรมเมื่อเริ่มเหนื่อย
- การหายใจเข้าช้าๆ ให้ท้องโป่งออกและหายใจออกให้ท้องแฟบ
- อย่ารอให้อาการรุนแรง ถ้าหาวิธีบรรเทาแล้วไม่ทุเลาควรรีบมาพบแพทย์ทันที



การหายใจออก

การหายใจเข้า



19 การขยายตัวของซี่โครงปอดระหว่างหายใจเข้าและออก



13 ควรมาตรวจตามแพทย์นัดอย่างสม่ำเสมอ
เพื่อประเมินสภาพและติดตามผลการรักษาเป็นระยะๆ
ถ้าพบความผิดปกติจะได้รับการแก้ไขหรือรักษาได้ทันที่
ไม่ให้มีอาการรุนแรงขึ้น

สุขภาพหัวใจที่ดีเริ่มต้นที่ตัวท่านเอง



ด้วยความปรารถนาดี

นุชรินทร์ ภัทรวิชัย





ชีวิตที่ดี เริ่มจาก การมีสุขภาพดี
สุขภาพหัวใจที่ดี เริ่มจาก การดูแลตัวท่านเอง

✔ หัวใจและห่วงใยในสุขภาพของท่าน



คู่มือการปฏิบัติตัว
สำหรับผู้ป่วย
ภาวะหัวใจล้มเหลว



โดย

นาง นุรรัตน์ ชัดวิชัย

นักศึกษายาบาลศาสตร์มหาบัณฑิต
คณะพยาบาลศาสตร์ มหาวิทยาลัยมหิดล



ຄຳນຳ

ภาวะหัวใจล้มเหลว เป็นภาวะที่หัวใจเสียหน้าที่หัวใจ ไม่สามารถสูบฉีดเลือดให้เพียงพอกับความต้องการของร่างกายได้ การ ทำหน้าที่ของหัวใจมีประสิทธิภาพลดลง มีผลต่อระบบต่ออวัยวะส่วน ต่างๆ เช่น ปอด,ตับ,ไต,สมองและอวัยวะส่วนต่างๆของร่างกาย เกิด อาการผิดปกติ เช่น อาการหายใจลำบากเหนื่อยหอบ นอนราบไม่ได้ อาการบวม ใจเต้น ใจ ปวดศีรษะ เมื่ออาหาร ท้องมาน ฯลฯ ดังนั้นในการดูแลตนเองเพื่อควบคุมความรุนแรงของอาการหายใจ ลำบากให้บรรเทาลงผู้ป่วยจึงควรมีความรู้ ความเข้าใจ และตระหนักถึง ความสำคัญในการปฏิบัติตัวให้ถูกต้อง เหมาะสมกับความเจ็บป่วย สามารถลดภาวะแทรกซ้อนและป้องกันอันตรายที่อาจเกิดขึ้น ได้อย่างมี ประสิทธิภาพ

ผู้จัดทำจึงเห็นความสำคัญในการเผยแพร่ความรู้ เพื่อการปฏิบัติคนเมืองคันทันในบรรดาหอการหายใจอำนาจและลดภาวะแทรกซ้อนตลอดจนการป้องกันอันตรายจากการหายใจอำนาจที่เกิดขึ้นได้ นอกเหนือมีความรุนแรงเพิ่มขึ้น อาจทำให้เป็นภัยพิวตาคือชีวิตได้

บุษวิทย์ จักรวิชัย
ธันวาคม 2545

1. หัวใจสำคัญคืออะไร?

หัวใจทำหน้าที่สูบฉีดเลือดไปเลี้ยงเนื้อเยื่อและอวัยวะส่วนต่างๆ ของร่างกายให้เพียงพอกับความต้องการของร่างกาย การทำงานของหัวใจต้องอยู่ในสภาวะที่สมดุลเลือดไปเลี้ยงร่างกายได้ มีผลกระทบต่อการทำงานของอวัยวะทุกส่วนของร่างกาย หัวใจทำงานหนักขึ้นจนเกิดภาวะหัวใจล้มเหลว ทำให้เกิดอาการหายใจลำบากเหนื่อยหอบ และเกิดอาการบวมบริเวณส่วนปลายของร่างกาย เช่น เท้า หน้าแข้ง มือ

2. เริ่มต้นดูบทหัวใจของชุด!

ไม่ว่าคุณจะเป็นวัยใด วัยรุ่น วัยหนุ่มสาว วัยทำงาน หรือผู้สูงอายุ ต่าง
ก็มีโอกาสจะเป็นโรคหัวใจได้ทั้งสิ้น เนื่องในปัจจุบัณการเป็นโรคหัวใจจาก
ไขมันในเลือดสูง และพบในผู้ที่สูบบุหรี่จัดหรือดื่มแอลกอฮอล์ เนื่องจากพฤติกร
รมชีวิตในปัจจุบันมักไม่ค่อยออกกำลังกายและดูแลสุขภาพด้านหัวใจที่ควร ทั้ง
เรื่องอาหารการกิน การออกกำลังกาย ทำให้น้ำตาลในเลือดสูงและการเป็นโรค
หัวใจก็เพิ่มมากขึ้น ทั้งนี้ที่ภาวะโรคหัวใจของโรคที่รุนแรงสามารถป้องกัน
ได้ด้วยการดูแลสุขภาพของคุณเอง



3. การเกิดอาการหายใจลำบาก

อาการประตีกิริยาการทำงานของหัวใจลดลง ทำให้ปอดมีการทิ้งของเลือดและช่องปอดมีน้ำในถุงลมปอดทำให้การแลกเปลี่ยนก๊าซลดลง

4. สาเหตุ

1. การที่การทำงานของหัวใจล้มเหลวผิดปกติ เช่น อัมพาตหัวใจ, ฝืน, ความดันโลหิตสูง
2. การทำงานของกล้ามเนื้อหัวใจผิดปกติ เช่น กล้ามเนื้อหัวใจขาดเลือด, กล้ามเนื้อหัวใจอักเสบ, กล้ามเนื้อหัวใจพิการ
3. ความผิดปกติของภาวะต่างๆ ที่กระตุ้นให้หัวใจทำงานหนักมากขึ้น เช่น ภาวะช็อค, ภาวะเจ็บใจ, ความผิดปกติของต่อมไร้ท่อ, การติดเชื้อ, การรับประทานยาผิดความเข้มข้น
5. อาการหายใจลำบากในผู้ป่วยภาวะหัวใจล้มเหลวมีลักษณะดังนี้

1. เมื่อยล้าขณะออกกำลังกายปกติหรือออกกำลังกายหนัก
2. เวลารับน้ำได้รู้สึกเหนื่อย ต้องลุกขึ้นนั่ง ทุเลาเหนื่อย
3. อาการหอบเหนื่อยเป็นพักๆ เวลาออกกำลังกายเพียง 2-3 ชั่วโมง คั้นนอนหลับลึกแล้วอาการหายใจไม่ออกอย่างรุนแรง มักมีอาการไอและหายใจเหนื่อยหอบ จะมีการประมาณ 15-20 นาที หรือนานกว่านี้

4. อาการมีอาการไอร่วมด้วย

5. มีอาการหายใจเหนื่อยหอบขึ้นตามการหายใจเร็วก่อนหายใจเร็วขึ้น

6. การทำอย่างไรเมื่อมีอาการหายใจลำบาก

1. ประเมินดูระดับความรุนแรงของอาการก่อนจะบอกแพทย์ ทุกครั้งหรือไม่
2. หยุดพักทันที งดทำกิจกรรมทุกอย่าง เพื่อลดการบีบอัดการที่ผิดปกติ ควรนั่งลง หรือจะสูงหรือนั่งไว้ส่วนข้างบนของลำตัว
3. หยุดพักแล้วการไม่ดีขึ้น ควรนอนโดยหันหัวให้สูง โดยให้นอนคว่ำที่ท่าบนเตียงหรือหงายหัวขึ้น ถ้ามีอาการเหนื่อยแล้ว 2 ครั้งแล้วอย่าไปนอนใน 10-15 นาที ควรพักผ่อน 1 ชั่วโมง แล้วพักอีก 1 ชั่วโมง หรือถ้ารู้สึกเหนื่อยหรือหายใจไม่ออกให้รีบมาโรงพยาบาลทันที
4. ถ้ามีอาการเหนื่อยหอบขึ้นทันทีทันใดควรรีบไปพบแพทย์ และให้โทรเรียกรถพยาบาลฉุกเฉินตามโรงพยาบาล



7. ควรหลีกเลี่ยงปัจจัยใดที่ทำให้เกิดอาการหายใจลำบาก ดังต่อไปนี้

- การออกกำลังกายหนัก หรือเล่นกีฬา
- การออกกำลังกายกลางแจ้ง
- การสูดน้ำมนต์กว่า 1 ชั่วโมงต่อวัน
- การรับประทานอาหารรสเค็ม
- การขบเคี้ยว
- อารมณ์ตื่นเต้น, กลัว, หงุดหงิด, วิตกกังวล, วิตกกังวล
- การพักผ่อนไม่เพียงพอ, นอนไม่หลับ
- การกระตุนอาหารร้อน หรือเย็นจัด
- การอยู่ในที่แออัด อากาศถ่ายเทไม่สะดวก

8. การปฏิบัติตน

1. ควรเข้าใจภาวะโรคของตนเองว่าเป็นโรคหัวใจชนิดใด โดยอยู่ในระยะใด เพื่อการปฏิบัติตัวที่เหมาะสมกับภาวะของโรค
2. การใช้ยาอย่างถูกต้อง
3. หลีกเลี่ยงสิ่งที่ไม่ดีให้หัวใจทำงานเพิ่มขึ้นเกินปกติ เช่น การสูดอากาศเย็นที่ต่ำเกินไป, สูบบุหรี่ที่ต่ำเกินไป, อาหารร้อน อากาศเย็นเกินไป

4. หลีกเลี่ยง การรับประทานอาหาร ควรจำกัดเกลือ รับประทานผลไม้

5. การพักผ่อนให้เพียงพอ นอนอย่างน้อยวันละ 8-10 ชั่วโมง
6. การปฏิบัติกิจวัตรประจำวันในระดับที่สามารถทำได้ ไม่เกินกำลัง ถ้าเหนื่อยต้องหยุดพักทันที
7. การตรวจตามแพทย์นัดทุกครั้ง
8. การปฏิบัติให้ความรู้ความเข้าใจของแพทย์และพยาบาล
9. สังเกตอาการเปลี่ยนแปลงที่เกิดขึ้น และควรทราบอาการที่ต้องพบแพทย์

อาการไอ เหนื่อยหอบ นอนราบไม่ได้
การเหนื่อยของหัวใจผิดปกติ หัวใจโตผิดปกติ, ใจเต้น, เป็นลม, แขนขาชา, อันตรายถึง

- มีอาการบวม ผิวหนังคัน กล้ามเนื้อ
- น้ำหนักตัวเพิ่มขึ้น 1 กิโลกรัมภายใน 1 วัน

10. การทำจิตใจให้สงบ ไม่เครียด มีสมาธิ อย่างสม่ำเสมอและโกรธ คิดเสมอว่าโรคนี้สามารถควบคุมได้

ความตึงเครียด คือ สัญญาณชีวิต

ท่านรู้จักหรือยัง?

เพื่อสุขภาพหัวใจของท่าน



หัวใจ

คือ

ชีวิต



ด้วยความปรารถนาดี
จาก



กรมการแพทย์
กระทรวงสาธารณสุข



A Heart for Life



เริ่มต้นดูแล ตัวเองเพื่อความ แข็งแรงของ สุขภาพหัวใจ



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ภาพเหล่านี้ใช้โดยมูลนิธิหัวใจแห่งประเทศไทย

เริ่มต้นดูแลสุขภาพหัวใจ



ไม่ว่าคุณจะเป็นวัยรุ่น หนุ่มสาววัยทำงาน หรือผู้สูงอายุ สำหรับวิธีการที่จะเป็นโรคหัวใจและหลอดเลือดได้ทั้งนั้น ขึ้นกับวิถีชีวิตและการเป็นโรคหัวใจขาดเลือด และโรคหลอดเลือดสมอง (อัมพาต) พบในวัยทำงานมากกว่าในวัยสูงอายุและพบในผู้ชายมากกว่าผู้หญิง เนื่องจากการดำเนินชีวิตในวัยผู้ใหญ่ ที่ไม่ได้มีเวลาพักผ่อนเพื่อการเป็นโรคหัวใจและหลอดเลือดของตนเอง (อัมพาต) เป็นมากขึ้นทุกที สุขภาพเริ่มก้าวถอยร่น ทั้งเรื่องอาหารการกินและการออกกำลังกาย (ทำให้มีโรคภัยเสี่ยงต่อการเป็นโรคหัวใจและหลอดเลือดของตนเอง (อัมพาต) เป็นมากขึ้นทุกที ที่จริง โรคอัมพาตเหล่านี้สามารถป้องกันได้ด้วยตัวคุณเอง ขึ้นกับวิถีชีวิต ในการดูแลสุขภาพร่างกายเพื่อสุขภาพหัวใจให้แข็งแรงของ คุณ

ดูแลสุขภาพหัวใจได้ด้วยตัวเอง

1. พึงเป้าหมายให้กับตัวเองที่จะมีน้ำหนักตัวที่เหมาะสม และมีสุขภาพที่ดี ลดน้ำหนัก หากมีน้ำหนักเกิน เพราะอาจจะส่งผลต่อสุขภาพหัวใจได้



4. ลดการกินเค็ม (ไม่เกิน 1 ช้อนชาต่อวัน) ลดการกินน้ำตาล (ไม่เกิน 4 ช้อนโต๊ะต่อวัน) ไม่สูบบุหรี่



5. งดดื่มเครื่องดื่มแอลกอฮอล์จากการดื่มแอลกอฮอล์ (ผู้ชาย ไม่เกิน 3 แก้วต่อวัน ผู้หญิงไม่เกิน 2 แก้วต่อวัน) ซึ่งจะช่วยป้องกันมะเร็งปอด มะเร็งตับ ที่สำคัญหากท่านเลิกได้ จะเป็นแบบอย่างที่ดีและเป็นกำลังใจให้เพื่อนำท่านให้เลิกด้วย

6. ควรไปตรวจวัดความดันโลหิตและระดับน้ำตาลในเลือด เมื่ออายุมากกว่า 40 ปีขึ้นไป และเมื่อกลุ่มเสี่ยง รวมทั้งควรอย่าให้ความดันโลหิตสูง และอาจเสี่ยงต่อการเป็นโรคหัวใจและโรคหลอดเลือดสมอง (อัมพาต)



7. ควรเรียนรู้ว่าตัวเองมีผลของความเสี่ยงต่อระดับความดันโลหิตและระดับน้ำตาลในเลือดหรือไม่ ตรวจสุขภาพอย่างสม่ำเสมอ

8. หากพบว่าตัวเองมีความดันโลหิตสูง หรือเป็นโรคเบาหวาน ต้องควบคุมระดับน้ำตาล ระดับความดันโลหิตและระดับน้ำตาลในเลือด มากกว่าบุคคลทั่วไป



9. หากเป็นโรคหัวใจแล้วอยู่ ควรเสริมทักษะในการจัดการตัวเอง เมื่อควบคุมระดับความดันโลหิตและระดับน้ำตาลในเลือดไม่ได้เป็นเวลานาน หรือรบกวนกับการรักษา และเข้ารับการตรวจอย่างสม่ำเสมอ

10. รู้จักกลายเครียด และทำจิตใจให้ร่มรื่นในที่สุดอยู่เสมอ เมื่อป้องกันและต่อสู้กับปัญหา หรืออุปสรรคเข้ามาในชีวิตได้ผ่านพ้นไปเพื่อดี



2. ทำหัวใจให้มีความกระฉับกระเฉงทุกวัน รวมทั้งเสริมการเคลื่อนไหวร่างกายแบบแอโรบิก เช่น การเดินเร็วๆ วิ่ง ว่ายน้ำ หรืออื่นๆ โดยใช้เวลาอย่างน้อย 30 นาที ต่อวัน และพยายามปฏิบัติให้ได้มากที่สุด ในแต่ละสัปดาห์



3. ลดการกินอาหารที่มีไขมัน คอเลสเตอรอล และพลังงาน (แคลอรี) สูง เช่น การกินผัก และผลไม้ให้มากขึ้นในแต่ละมื้ออาหาร



BIOGRAPHY

NAME	Mrs. Nucharat Chatvichai
DATE OF BIRTH	30 October 1954
PLACE OF BIRTH	Petchaburi, Thailand
INSTITUTIONS ATTEND	Srinakharinwirot University, 1982-1984 B.ED. (Nursing education) Mahidol University, 2001-2003 Master of Nursing Science (Adult Nursing)
POSITION & OFFICE	Bankok Metropolitan Administration General Hospital Out Patient Nursing Division Cardiological Department, Bankok, Thailand 10100 Position: Nurse rank 7
HOME ADDRESS	Tel. 02-216-0836, 02-216-7366 E-mail: Nucharat_c@hotmail.com