

**FACTORS INFLUENCING THE DECISION TO SEEK
TREATMENT OF PATIENTS WITH ACUTE
MYOCARDIAL INFARCTION**

The seal of Mahidol University is a circular emblem. It features a central blue circle containing a golden Thai-style stupa or chedi. The stupa is topped with a flame-like finial and has intricate carvings. The blue circle is surrounded by a wider yellow ring. Inside this ring, the Thai text "จุฬาลงกรณ์มหาวิทยาลัย" (Mahidol University) is written in a circular path. There are also small golden floral motifs on the left and right sides of the yellow ring.

NUCHANAT KRAIRATCHAROEN

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Thesis
Entitled

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OF PATIENTS WITH ACUTE MYOCARDIAL INFARCTION**

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ABSTRACT

The purposes of this descriptive study were to study the decision time for seeking treatment, and to examine the predictability of selected factors influencing the decision for treatment among patients with acute myocardial infarction. The sample included 105 acute myocardial infarction patients who received treatment in the medical department of three settings: Buddhachinaraj Hospital, Phitsanulok province, Uttaradit Hospital, Uttaradit province, and Sawanpracharak Hospital, Nakornsawan province. Data were collected through interview during May and September, 2005 using demographic and clinical data, which included the decision time to seek treatment, and an illness perception questionnaire as instruments.

The results revealed that the mean decision time to seek treatment was 95.24 minutes (S.D. = 88.29) whilst the median was 60.00 minutes. Age, gender and three components of illness perception (illness identity, time-line and control/cure) showed no relationship whilst consequences component showed a significant positive relationship with the decision time to seek treatment of acute myocardial infarction patients ($r = .244$, $p < .05$). Consequences and control/cure components had co-predictability toward the decision to seek treatment at the value 6.2% whilst only the consequences component had predictability value at 5% with statistical significance ($p < .05$).

Information obtained from this study may be beneficial for nurses to develop informational interventions to promote appropriate decision to seek treatment of acute myocardial infarction patients. Nurses should increase awareness of educating patients and family, particularly heart disease risk-groups to be able to assess signs and symptoms of acute myocardial infarction correctly, which would result in their appropriate self-management and timely seeking of treatment.

KEY WORDS: ACUTE MYOCARDIAL INFARCTION / DELAYED SEEKING
TREATMENT / SELF REGULATION THEORY/ ILLNESS
REPRESENTATION / PERCEPTION OF ILLNESS

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ปัจจัยที่มีอิทธิพลต่อการตัดสินใจมารับการรักษาของผู้ป่วยกล้ามเนื้อหัวใจตายเฉียบพลัน
(FACTORS INFLUENCING THE DECISION TO SEEK TREATMENT OF PATIENTS WITH
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บทคัดย่อ

วัตถุประสงค์ของการวิจัยเชิงบรรยายครั้งนี้ เพื่อศึกษาระยะเวลาในการตัดสินใจมารับการรักษาและ
อำนาจในการทำนายของปัจจัยที่คิดสรต่อระยะเวลาในการตัดสินใจมารับการรักษาของผู้ป่วยกล้ามเนื้อหัวใจตาย
เฉียบพลัน กลุ่มตัวอย่างที่ใช้ในการศึกษาค้นครั้งนี้เป็นผู้ป่วยที่มีภาวะกล้ามเนื้อหัวใจตายเฉียบพลันจำนวน 105 ราย
ซึ่งรับไว้รักษาในแผนกอายุรกรรม โรงพยาบาลพุทธชินราช จังหวัดพิษณุโลก โรงพยาบาลอุดรดิตถ์ จังหวัด
อุดรดิตถ์ และโรงพยาบาลสวรรค์ประชารักษ์ จังหวัดนครสวรรค์ เก็บรวบรวมข้อมูลโดยการสัมภาษณ์ตั้งแต่เดือน
พฤษภาคมถึงเดือนกันยายน 2548 โดยใช้แบบสอบถามข้อมูลส่วนบุคคล ข้อมูลเกี่ยวกับสภาวะทางคลินิกและ
ระยะเวลาที่ใช้ในการตัดสินใจมารับการรักษา และแบบสอบถามการรับรู้ภาวะความเจ็บป่วยของผู้ป่วยกล้ามเนื้อ
หัวใจตายเฉียบพลัน

ผลการวิจัยพบว่ากลุ่มตัวอย่างในการศึกษาค้นครั้งนี้ใช้ระยะเวลาในการตัดสินใจมารับการรักษาเฉลี่ย
95.24 นาที (S.D.= 88.29) โดยมีค่ามัธยฐานเท่ากับ 60.00 นาที ปัจจัยส่วนบุคคลทั้งอายุและเพศ รวมทั้งการรับรู้
ภาวะความเจ็บป่วยด้านลักษณะของอาการที่เกิดขึ้น ด้านระยะเวลาที่คาดว่าจะความเจ็บป่วยจะดำเนินไป และด้าน
ความสามารถในการควบคุมหรือรักษาความเจ็บป่วยที่เกิดขึ้น ไม่มีความสัมพันธ์กับการตัดสินใจมารับการรักษา
($p>.05$) ส่วนการรับรู้ภาวะความเจ็บป่วยด้านผลที่คาดว่าจะเกิดตามมาภายหลังจากความเจ็บป่วยมีความสัมพันธ์
ทางบวกกับการตัดสินใจมารับรักษาของกลุ่มตัวอย่าง อย่างมีนัยสำคัญทางสถิติ ($r = .244, p < .05$) ทั้งการ
รับรู้ภาวะความเจ็บป่วยด้านผลที่คาดว่าจะเกิดตามมาภายหลังจากความเจ็บป่วยและด้านความสามารถในการ
ควบคุมหรือรักษาความเจ็บป่วยที่เกิดขึ้น สามารถร่วมทำนายการตัดสินใจมารับรักษาของกลุ่มตัวอย่างได้ร้อยละ
6.2 อย่างมีนัยสำคัญทางสถิติ ($p<.05$) โดยที่การรับรู้ภาวะความเจ็บป่วยด้านผลที่คาดว่าจะเกิดตามมาภายหลัง
จากความเจ็บป่วย สามารถทำนายการตัดสินใจมารับรักษาของกลุ่มตัวอย่างได้ร้อยละ 5.0 อย่างมีนัยสำคัญทาง
สถิติ ($p<.05$)

ข้อมูลที่ได้จากการศึกษาค้นครั้งนี้จะเป็นประโยชน์สำหรับพยาบาลในการพัฒนาแนวทางหรือวิธีการปฏิบัติ
เพื่อส่งเสริมให้ผู้ป่วยกล้ามเนื้อหัวใจตายเฉียบพลันมีการตัดสินใจมารับรักษาอย่างเหมาะสม รวมทั้งส่งเสริมให้
พยาบาลเพิ่มความตระหนักถึงการให้ความรู้แก่ผู้ป่วยและครอบครัว โดยเฉพาะผู้ที่มีภาวะเสี่ยงต่อการเกิดโรคหัวใจ
เพื่อให้สามารถประเมินอาการและอาการแสดงของภาวะกล้ามเนื้อหัวใจตายเฉียบพลันได้อย่างถูกต้อง ซึ่งจะส่งผล
ให้เกิดการจัดการกับตนเองอย่างเหมาะสมและตัดสินใจมารับรักษาอย่างทันเวลาที่

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CHAPTER I

INTRODUCTION

Background and Significance of the Study

Acute Myocardial Infarction (AMI) is nowadays quite common in developed and developing countries because of it is a crucial incidence which may cause sudden death. In the United States for example, 1.5 million people suffered from acute AMI (Zewic, 1998). Mitchell, Muggli and Sato (1999) reported that the disorder caused about 500,000 deaths every year and about 50% of the sufferers died within one hour after they had developed acute myocardial infarction (NHLBI, 1992). In Thailand, the Office for Public Health Statistic, Health Policy and Planning, the Ministry for Public Health reported in 2001 that the mortality rate caused by acute coronary syndrome was 12.4 per 100,000 population. Even though quite a few patients with acute coronary syndrome may have survived their ordeal, but the disease still had a tremendous physical and psychological effect on their quality of life and their families. Physical effects like for example: limitation of physical activities and limited abilities to perform their roles, duties or responsibilities they used to do before the AMI occurred and still suffer as well as feeling a certain degree of discomfort. The psychological effects are emotional and psychological disturbances, like anxiety, depression, and stress. The severity of the effects is usually depending on the severity of their illness but would be higher if the patients have received improper and or and delayed treatment.

According to the statistics on morbidity, mortality, and the effects of illness on quality of life, the treatment for acute myocardial infarction has been continuously developed with the aim to decrease the number of morbidity and mortality. Treatments, accepted as effective regimens are the thrombolytic therapy, and Percutaneous Transluminal Coronary Angioplasty (PTCA) (Julie, Catherine, Holli & Mary, 2003). However, treatments are only effective if patients receive them just in

time or shortly after onset. It has been reported that if given a thrombolytic therapy within the first 70 minutes after the symptoms developed, it would minimize the mortality rate (within the next 30 days) seven times less than those who received the treatment after 70 minutes the symptoms have occurred (Weaver, Cerqueira & Hallstrom, 1993). This report has been confirmed by the study of Boersma, Maas and Dechers (1996) which revealed that the thrombolytic therapy would be most effective if it is given to the patients within an hour after the onset of acute myocardial infarction. Besides saving patients lives, the thrombolytic therapy minimizes the chances for developing a physical disability and increases the effectiveness of the heart function. Furthermore it can increase the blood circulation, decreases the infarct size, and maintains the normal contractibility of the myocardium cells (Dracup & Moser, 1997). PTCA has been reported to be an effective treatment, especially if it comes to open the arteries and to prevent the recurrent necrosis of the myocardium. The effectiveness of PTCA treatment is higher if it was given to the patients in less than six hours (compared with within 6 to 12 hours) after the onset of acute myocardial infarction symptoms. (van Hof, 1997).

Even though the effective regimens dealing with acute myocardial infarction have been developed for a period of time now, the mortality rate among the patients is nevertheless still high and a number of the patients remain inaccessible to the effective treatment. The delayed treatment was a cause of disorder's bad prognosis and increased the risk of death. The time between the onset of symptoms and received thrombolytic therapy or PTCA closely correlates with the effectiveness of the treatment. So shorter time frame the patient received the proper treatment, so better the treatment efficiency (Dracup, et al., 1995).

According to various studies of delayed treatment for patients with acute myocardial infarction, an average of duration between the onset of symptoms and the time patients walking into the emergency unit was between 6 and 29 hours which amounts to the median of 2 to 4 hours for each patient (Dracup & Moser, 1991; GUSTO investigators, 1993; Goldberg, Gurwitz & Gore, 1999). 25% to 50% of the patients came for treatment after six hours of the symptoms onset (Dracup & Moser, 1997). This statistic has been quite steady for the past two decades. The literature review showed that there were a variety of factors involved in the delay of treatment

and were both, patient's personal factors and clinical factors. Personal factors for examples were mainly gender and age. Females were reported to take longer time to make a decision to come for treatment than males (Dracup & Moser, 1993; GISSI, 1995; McKinley, Moser & Dracup, 2000). Elderly patients usually went to receive treatment later than the younger ages (GISSI, 1995; Dracup & Moser, 1997). Clinical status factors were the history of acute myocardial infarction and other heart diseases, as well as patient's knowledge in relation to the diseases. From previous studies, the factors about the history of acute myocardial infarction and knowledge of disease did not associate with the patients prompt decision to receive treatment (Dracup, Moser, 1991, 1997; Dracup, et al., 1995; Meischke, Ho, Eisenberg, Schaeffer & Larsen, 1995; GISSI, 1995; Berglin, Hartford, Karlsson & Herlitz, 1998), but the history of other diseases such as diabetes mellitus and hypertension were associated with the delay of patients' decision time to seek treatment (GISSI, 1995; Dracup & Moser, 1997; Brody, Diodati, Bogaty & Theroux, 1998).

Other personal factors involving the patients' decision to visit health institutions for treatment were their marital status, income and educational level. The studies of factors revealed different results (similar, relevant and contrast). The study done by Burnett, Blumenthal, Mark, Leimberger and Califf (1995) revealed that there was no difference in educational levels between the group with acute myocardial infarction who promptly came for treatment and those who delayed their visit to a health institution for treatment. This finding had similar results to the study done by GISSI (1995) and Dracup and Moser (1997) which showed that the number of educational years or education level did not associate with the patients' decision to receive treatment. Actually, a study of patients experiencing AMI in Australia revealed that patients who had 9-12 years of education took longer time for making the decision to receive treatment than those with more than 12 years of education (Dracup, McKinley & Moser, 1997).

Apart from personal factors, there were other reasons which influenced patients decision to visit a health institute and seek treatment. The factors were such as patients' milieu during the time of the symptoms onset, distance from home to hospital; place where the patients were at the time, and the person with whom the patients were together with. Surprisingly, patients who had the symptoms while they were at home

with their family members, showed higher rates of delayed treatment than those who were not at home and were not with family members, but with either co-workers or friends at the time of the symptoms onset (Dracup & Moser, 1997; McKinley, et al., 2000; Dracup, 2003).

Widely recognized as major factors influencing patients' health behaviors and decision to seek treatment was the patients' perception and concern about health problems. For instance, how patients perceived the symptoms at the onset period and how they responded to the perception. Existing studies revealed further factors delaying patients from receiving treatment. As there were the low level of patients' concern about physical and emotional changes, misinterpretation of the symptoms (perceived that it was not a symptom of heart disease), overlooked the severity of the symptoms, performed self-treatment, avoided being a burden of others, and had low efficacy to perceive the threat of disease. These misbehaviors were noted as the causes of patients' delay of making decision to visit health institute for treatment (McKinley, et al., 2000).

Proper and prompt treatment is vital for saving the lives of patients with acute myocardial infarction. The result of treatment not only has an effect on patients' quality of life but also has been seen as an indication on the quality of the particular health institution. The decision of either to accept prompt or delayed treatment were up to the patients themselves. As mentioned earlier, the process of patients' decision is influenced by various factors especially the patients' perception of health conditions and their responses to the perception.

Even though there were some studies carried out internationally, dealing with patients' delay of treatment, in Thailand, however, the studies in relation to circumstances have not been widely established yet. The Thai context and culture is different from those of the other countries. Therefore, the researcher was more interested in studying how Thai patients experienced acute myocardial infarction focused on their decision on when to receive treatment (the duration of time from the onset of the symptoms to the time they decided to receive treatment), factors influencing the process of decision making, and if the factors are similar or different to those revealed from acute myocardial infarction patients in other countries. The researcher was particularly interested in the factors associated with the patients'

perception of the illness such as the identity of the illness, the causes of the illness, the expected length of time that the illness advancement, the consequences of the illness, and the ability to control or treat the illness. The information gained was expected to promote health practitioners' understanding of the patients' conditions and perceptions influencing their decision whether or not they would go for treatment. The knowledge found is useful as baseline information to establish a proper and effective plan to assist acute myocardial infarction patients on how to encounter their health conditions and how to deal with the patients' delay of treatment.

Research Questions

1. What is the decision time frame to receive the treatment of acute myocardial infarction patients, counting from the onset of symptoms to decision making?
2. What are the relationship between the factors of age, gender, individual's perception of illness and the acute myocardial infarction patient's decision to seek treatment?
3. How do the factors of ages, gender, individual's perception of illness influence the acute myocardial infarction patient's decision to seek treatment?

Research Objectives

1. To study the acute myocardial infarction patient's decision to seek treatment by assessing the time frame counted from the onset of symptoms to the time the patient decided to seek treatment at a hospital.
2. To study the relationship between age, gender and individual's perception of illness and the acute myocardial infarction patient's decision to seek treatment.
3. To examine the predictability of age, gender and individual's perception of illness toward the decision to seek treatment of the acute myocardial infarction patients.

Conceptual Framework of the Study

The conceptual framework, which is used by the researcher to find and outline possible courses of action or presenting a preferred approach used to carry out this

study was Self-Regulation and lead to 'The Commonsense Model of Illness Representation' developed by Leventhal, Nerenz and Steele (1984). Self regulation is the process of voluntary control of a person over their physical, psychological and behavioral circumstances. Self-monitoring and the confidence in assessment and feedback information is reflected in the assessment of patients own behaviors and applied to guide patients' behavioral adjustment.

The 'Commonsense Model of Illness Representation' is noted as an information-processing model. The model is based on the believe that the patient's own definition or representation of an illness gives a powerful treatment and can manipulates the patients health-related behavior. This representation however does not necessarily reflect any scientific knowledge, but commonsense ideas of a person's own health in which he or she may use and enables them to better coping with the strategies. Therefore, this concept is one of the most appropriate concepts applied to explain the process of patient's health behaviors who are faced with serious health problems. In this study, the researchers employed the concept of explaining the health behavior related the decisions to seek treatment for acute myocardial infarction patients.

According to the above mentioned commonsense model of illness representation: If someone is encountering a serious health threat (as the acute myocardial infarction in this study) he or she must be the one who deal with the health threat first. Each individual would be seeking an appropriate approach to control ones health threats or be able to minimize the factors which may only worsen their health conditions in ways consistent with their perceptions (Diefenbach & Leventhal, 1996).

Considering the self-regulation, the commonsense model of illness representation, it can help a person who has developed an acute myocardial infarction, if he or she would respond to the illness in the following the three steps: Illness representation, action planning & coping, and appraisal.

1. Illness Representation: During this phase, a person's perceptions could be formed based on two dimensions, 'Cognitive Illness Representation' and 'Emotion Illness Representation'. However, this study only emphasized on the Cognitive Illness Representation in which the patients would organize, analyze, interpret and identify the meaning of the illness concerning previous knowledge, ideas, understanding, past

experiences related to the illness, surrounding informations, and the feeling towards the current illness. The dimensions of cognitive illness representation are 1) the identity in which an indicated individual's ideas has about the representation of the illness, 2) The indicated timeline in which an expected time frame of the illness, 3) The cause of the illness which indicated an individual's ideas about the possible causes of the illness, 4) The controllability which indicated an individual's perception of whether or not the illness could be controlled by self-intervention or professionals, and 5) the consequences of the illness both short and long terms on their lives and families.

2. Action planning and coping: This is the phase is used for making plan, bring it into action and deal with health threats. Individual have to cope with the illness and adjust their emotion. One need to decide a particular appropriate approach he/she would have to use do to cope with the illness (e.g. taking no action, self-intervention, consulting family members and/or surrounding people, calling for professional help, hospital). The individual may predict the outcome revealed from the chosen approach and therefore might employ different coping strategies to deal with the health threat irrelevant to medical advices. A misperception of the health threat however, would lead to improper coping strategies and delay of treatment which may cause an ineffective result of treatment (Holmberg & Kane, 1995 cited in China Wong, 1998).

3. Appraisal: During this phase an individual may evaluate the effectiveness of the chosen strategy by comparing ones health condition before and after performing the strategy. If the individual perceived that the strategy does not effectively improve health condition, the information gathered would be feed back to the prior phases for re-adjusting, action planning and considering alternative coping strategies. Furthermore, it might result in the change of an individual's representation of the illness.

The three phases pointed that the Commonsense Model of Illness Representation is a rather dynamic process, therefore a patient's representation may alters if there are new information or feedback information and the health behavior may change according to the information received. Thus, to convince acute myocardial infarction patient to go for a proper and prompt treatment, enhancing patients to possess accurate illness representation is necessary.

An individual's perception of one's illness representation is one of the major influencing factors for the individual decision making whether or not one receives treatment. Apart from this, there are other factors involving a person's decision making process. These factors are classified as internal and external factors. The internal factors are, for instance, age, gender, previous knowledge and experiences-related illnesses, occupation, marital status, educational level and income. The external factors are for example, surrounding environment (place, location where symptoms first occurred, and the persons who were accompanying the individual at the onset of the problems), clinical status (the severity of illness and symptoms, individual's history of health problems like diabetes mellitus, hypertension, chest pain, acute myocardial infarction, etc.). Apparently, there are a number of influencing factors which can involve in the decision making process of an acute myocardial infarction patient, to either accept treatment or deny it. However, in this study, the researchers decided to study only some of them, as there are age, gender, severity of illness symptoms, and an individual's history of health problems.

The association between age and delay of treatment of one's acute myocardial infarction were reported differently in different studies. Some studies revealed that elderly patients tended to show a higher rate of delayed treatment than those of younger ages (GISSI, 1995; Dracup & Moser, 1997). Nevertheless, some studies could well illustrate that age did not play a big role in a patient's delay for emergency treatment (Walsh, Lynch, Murphy & Daly, 2004).

In most studies, the relationship between gender factor and the delay of treatment was revealed congruently. Females with acute myocardial infarction showed a higher rate of delay than those of male patients (Dracup & Moser, 1993; GISSI, 1995; McKinley, 2000; Walsh, 2004). The studies on the differences about the decision on receiving treatment between the genders would be beneficial for the development of a proper program to minimize the number of delays for male as well as female patients.

The association between severity of illness symptoms and delays to receive treatment remains frustrating. The factor, in some studies, had an effect on individual's decision to receive or not to receive treatment (GISSI, 1995; Raczynski,

1999) but other studies of the factor showed no real significance on an individual's decision (Walsh et al., 2004; McKinley et al., 2004).

The history of health ones problems prior to the current hospital visit was noted as factors influencing individual's decision making process, whether or not to receive treatment or delay it were diabetes mellitus, hypertension, hypercholesterolemia, acute myocardial infarction, and angina pectoris. Diabetes mellitus and hypertension frequently occur together with acute coronary syndrome in various conditions such as, atherosclerosis, ischemic heart disease, and myocardial infarction. The evidences reported from previous studies demonstrated that acute myocardial infarction patients with a history of diabetes mellitus and hypertension decided to accept therapy rather later than those without a medical history (GISSI, 1995; Dracup & Moser, 1997; Brody, et al., 1998). Chest pain had positive effect on an individual's decision to receive early treatment. Surprisingly, past experiences of acute myocardial infarction did not convince the patient to come in early for treatment.

The factors which could illustrate an individual's perception of illness, age, gender, severity of illness symptoms, and history of health problems, could either induce or delay an individual's decision to go and seeking treatment. According to 'The Commonsense Model of Illness Representation' and other factors indicated, the study framework was modified to carry out this study based on Self-regulation, (Leventhal, et al., 1984) was shown below.

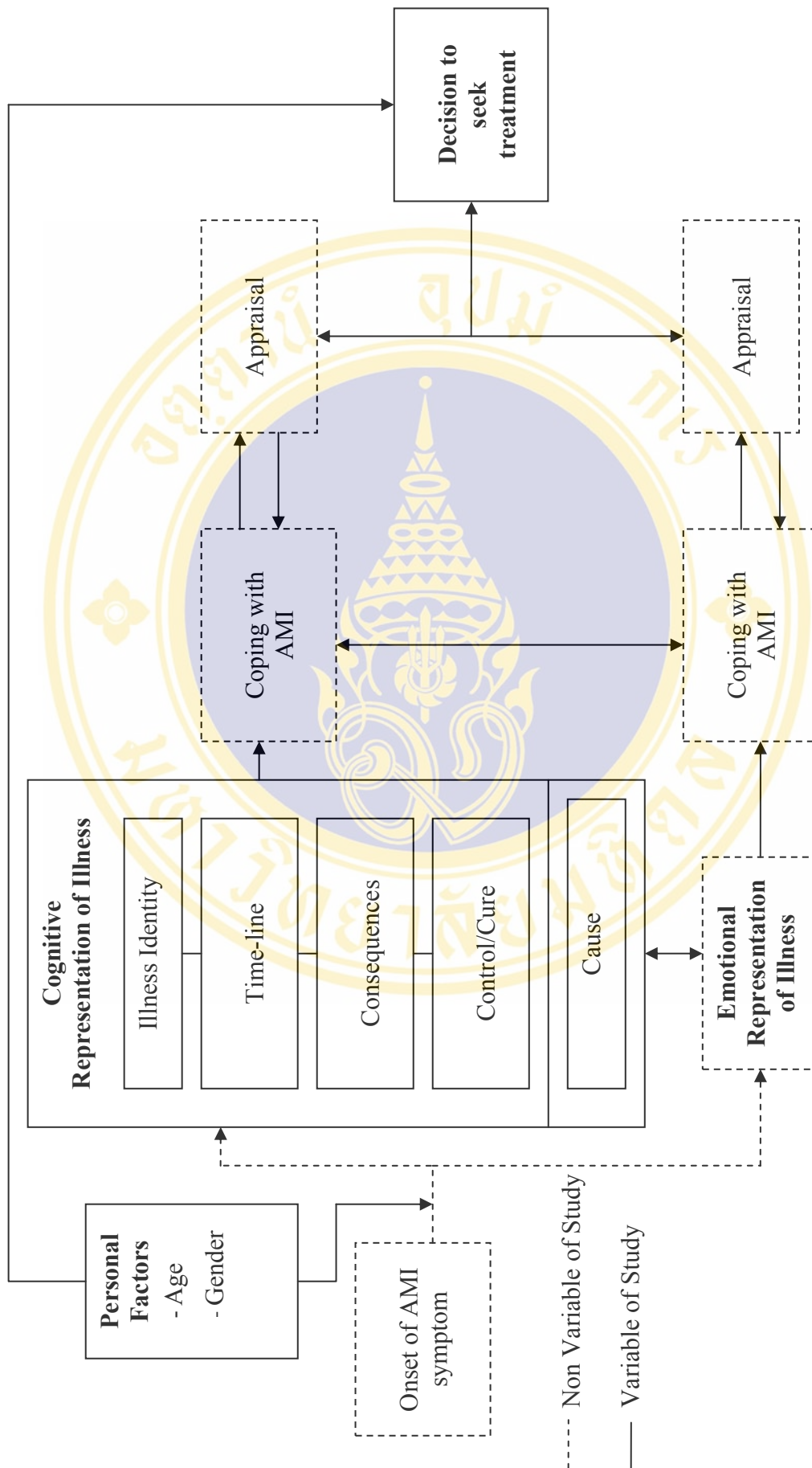


Figure1 Conceptual framework of the research which altered from the model of Self Regulation: The Commonsense Model of Illness Representation (Leventhal et al., 1984)

Scope of the Study

The study was a descriptive study and was aimed to study the influencing factors involving an acute myocardial infarction patient's decision to seek treatment of the Medical Department of the: 1) Buddhachinaraj Hospital, Phisanulok Province, 2) Uttaradit Hospital, Uttaradit Province, and 3) Sawanpracharak Hospital, Nakornsawan Province. The study was conducted from May to September 2005.

Definition of Terms

1. Factors influencing the decision to seek treatment are age, gender, individual perception of acute myocardial infarction patients.
2. Cognitive illness representation refers to an individual perception about the symptoms of acute myocardial infarction and the symptoms, causing them to seek for treatment. The individual perception is the perception of symptoms or experiences of the symptoms, causes of illness, expected duration of illness, the consequences of it, and the ability to control the illness. The cognitive illness representation was assessed using an interview approach modified by the researcher.
3. The decision to seek treatment refers to the time frame of a patient's decision to seek treatment after the onset of the symptoms which were the specific for acute myocardial infarction, and were the reasons for patients to look for therapy. The time frame considered was counted from the onset of the symptoms to the time the patient decided to seek treatment at a hospital.

Expected Outcomes and Benefits

1. Enhancing health practitioner better understanding of the factors which can influence a patient's decision to seek treatment, especially the individual's cognitive illness representation which could promote an improvement on solving existing problems. The results gained were expected to assist health practitioner to develop a proper approach to promote the patient's knowledge in regards to their illness, and guiding health practitioner to provide better consultation to their patients. The ultimate benefit was the improvement of the patient's life and their families.
2. Health practitioner knowing the time frame for decided to seek treatment of acute myocardial infarction patients.

CHAPTER II

LITERATURE REVIEW

In this research of factors which could influence the decision to seek treatment of acute myocardial infarction patients, the researcher has reviewed various literatures, such as journals, textbooks and other research documents with the following topics:

1. Acute myocardial infarction
 - 1.1 Definition of acute myocardial infarction
 - 1.2 Consequences of acute myocardial infarction
 - 1.3 Treatments of acute myocardial infarction
 - 1.3.1 Principles of treatment
 - 1.3.2 Thrombolytic therapies
 - 1.3.3 Percutaneous Transluminal Coronary Angioplasty-PTCA
 - 1.3.4 Significance of the time to receive the treatment
2. Patients various phases of delay to receive the treatment for acute myocardial infarction
3. Related factors which may influence the decision to seek treatment for acute myocardial infarction patients
 - 3.1 Factors about the cognitive illness representation which comprising of five components
 - 3.2 Personal factors, i.e., age and gender.
4. The Commonsense Model of Illness Representation (the conceptual framework of self regulation)
5. Conclusion

Acute myocardial infarction

Definition

A Myocardial infarction is caused by the imbalance between the amount of blood supply for the myocardium and the amount of oxygen required by the myocardium. If the myocardial ischemia happens for a too long time, the myocardium cells were destroyed. The main cause is the aggregation and destruction of the lipids at the coronary walls which include a deposition of fibrin and platelet in the endothelium which creates a thicker intima and decreases the lumen (coronary artery stenosis) (Hudak, Gallo, & Morton, 1998 cited in Wirongrong Nathongkham, 2000).

Criteria for acute, evolving or recent myocardial infarction (The ESC/ACC, 2000).

Either one of the following criteria satisfies the diagnosis for an acute, evolving or recent myocardial infarction:

1. Typical rise and gradual fall (troponin) or more rapid rise and fall Creatininkines-MB (CK-MB) of biochemical markers of myocardial necrosis with at least one of the following:

- ischemic symptoms such as chest pain or chest discomfort
- development of pathologic Q waves
- ECG changes indicative of ischemia (ST segment elevation or depression); or
- coronary artery intervention (e.g. coronary angioplasty)

2. Pathologic findings of an acute myocardial infarction

Types of acute myocardial infarction

1. Non-ST elevation of myocardial infarction (NSTEMI)

In this group, the electrocardiogram (ECG) showed no ST segment elevation, but showed a ST segment depression or T-wave inversion with a positive cardiac marker.

2. ST Elevation myocardial infarction (STEMI)

This is the group of patients with a high risk of suffering a sudden death. The electrocardiogram of this group shows ST segments and a positive cardiac marker. (If however, a patients of this group would receive prompt treatment, the coronary artery unblocked and the blood could flow through once again, the

myocardial infarction has not yet occurred and no Q-wave electrocardiogram (ECG) is found).

After the onset of the myocardial ischemia, the myocardium cells may not get an instant and complete infarction but will gradually develop it in a certain time (15 minute of myocardial infarction). The complete myocardial infarction requires about 4 to 6 hours. Depending on the type of the coronary blockage, whether it is a temporary or permanent blockage, and whether there is a blood circulation from an other area to compensate for the shortage from blockage or not (The ESC/ACC, 2000).

Clinical presentation

Myocardial ischemia can be assessed from a patient's history and the pattern of the ECG. It can also be assessed by the original symptoms which caused the patient to seek treatment. The indicating symptoms of ischemia are comprised of chest pain, xiphisternum, arm, shoulder, wrist, or jaws. The myocardial ischemia related pain is a retrosternal pain in middle or left chest and may typically radiating forward to arm, jaw, shoulder, and back. The pain may start at xyphoid (confusion with gastritis is very likely) then radiate to arm, jaw, shoulder, or back without any chest pain (atypical). The pain duration may last long at least 20 minute concurrently with the other symptoms such as dyspnea, nausea, sweating, altered level of consciousness or syncope, and unexplainable fatigue. These symptoms can occur concurrently without any chest pain. The retrosternal pain is due to the myocardial ischemia and cannot be relieved by breathing or body motion (The ESC/ACC, 2000).

According to the above mentioned clinical presentation of an acute myocardial infarction, patient may visit a health care service provider with different symptoms. Some clinical presentation may cause misunderstanding or confusing the patient, depending on their experience or knowledge of their illness. However, the patient's decision to seek treatment indicates that patient can assess his illness and its consequences as life threatening if not he or she would not seek treatment. From the moment a patient visit a health care service provider, the role of health care personnel to promptly and correctly diagnose the disease is vital. In order to provide prompt, efficient and correct treatment, especially for acute myocardial infarction from onset to

receiving appropriate medical treatment, are tightly related to the morbidity rate, mortality rate, and the patients quality of life later on.

Consequences of acute myocardial infarction

When a thrombosis blockage in coronary artery is followed by a myocardial infarction, the consequences are (Sarana Boonbaichaiyapruueck, 2000):

1. No consequences: If the myocardial infarction occurs in just a small area, so there is no consequence to circulatory system. Chest pain may however occur at the early stage but be gradually healed. The patient can be back to the normal life.
2. Death: The patients may die suddenly after a sudden cardiac arrest prior to arrive at hospital. The patient also may die due to serious complication with the ventricular tachycardia or a ventricular fibrillation. The myocardium may be damaged therefore the blood supply from the heart becomes insufficient for the bodies demand. Partial damage to myocardium, even though only a small area is affected, may still induce a cardiac rupture, acute mitral regurgitation or ventricular septal defect.
3. Survive with heart failure: Damage to myocardium partially but the patients still survived. However, patients have sign or symptom of heart failure.
4. Survive with angina pectoris: The patient may still have a myocardial infarction or ischemia within the infarction area or its vicinity.
5. Survive with both heart failure and angina pectoris: It often occurs that patients who die at a later stage of a myocardial infarction, die through relapses of ischemia causing chest pain or angina.

Treatment of acute myocardial infarction

The main purpose of acute myocardial infarction treatment is to clear the blockage in coronary artery rapidly. Once reperfusion of blood is recovered the myocardium, infarction area is limited and the ventricular function is retained.

Principle of treatment

The principle of acute myocardial infarction treatment is speed, so faster the treatment is received, so higher the survival. The targets of the treatment regimens are as follows:

1. Relieving pain and anxiety.
2. Preserve myocardium as much as possible.
3. Prevent and treat complication.

The preserving myocardium or limiting myocardial infarction comprises of two treatment concepts:

1. Reperfusion, this therapy is a well known treatment to fight myocardial infarction for a long time (it has been developed until became a trustworthy treatment regimen). Its principle is to re-perfuse the blood through the blockage in coronary artery as fast as possible. Treatment may include a thrombolytic agent, and percutaneous transluminal coronary angioplasty-PTCA.

2. Minimizing the cardiac metabolic demand by using a cardio-circulatory function regulating drug to minimize the cardiac metabolic demand.

Thrombolytic agent usage

During 1970 to 1980, studies found that after a thrombosis formed from a blockage of the coronary, the occurring myocardial infarction start form the subendocardium and then expanding to the epicardium. The myocardial infarction progresses gradually and until a 100% myocardial infarction is reached within 4 to 6 hours. Reperfusion can be achieved by using thrombolytic agents during the acute myocardial infarction period with a good chance for the patient to recover and save him or her from otherwise curtain death (Nithi Mahanon, 2000; Sarana Boonbaichaiyaprucek, 2000).

Nowadays, thrombolytic medications have been widely accepted due to its capability to decrease the mortality rate of myocardial infarction patients. The pharmacological aim of this drug is to activate a change from plasminogen to plasmin, which has a clotlysis effect. A thrombolytic agent is given either via intravenous infusion or coronary artery catheter. The thrombolytic agent will break down the thrombosis in blockage area of coronary and so recovery the reperfusion of blood circulation. As a result the area of myocardial infarction can be minimized as well as recovered the function of the left ventricle and so reduce the mortality rate from myocardial infarction. The most widely used thrombolytic agent in Coronary Care Unit are Streptokinase, Urokinase, Tissue Plasminogen activator (t-PA). The patients who get the most benefit from thrombolytic agent are as follows (Sarana Boonbaichaiyaprucek, 2000):

1. Patients who suffered from angina pectoris for at least 30 minutes and their ECG has shown a ST elevation. For more than 90% of patients the

total occlusion of the coronary artery can be achieved by applying a coronary angiography. Thrombolytic medication is very effective in reducing occlusion within 90 minutes post management. In addition, the myocardial dysfunction (especially the left ventricle) can be recovered. On average, thrombolytic agent can save 40% of this group of patients or 30 to 50 patients in 1000. Most patient in this group who have survived, remain within the large area of myocardial infarction, measured by the leading number of the ECG which also show a ST- elevation, especially myocardial infarction of anterior wall.

2. Patients who suffered from angina pectoris for at least 30 minutes with a left bundle branch block (LBBB).

3. Patients who seek prompt treatment after having the first symptoms. According to the study, the survival rate is high if receiving medication within 1 hour after the onset of symptoms.

Although thrombolytic agent treatment is effective in opening the blood flow area in the coronary, some problem may arise from medication, i.e., the reperfusion area is only 80% of total available lumen area, so the re-occlusion can only happen for 7-29% of the surviving patients, this medication is prohibited for use with if a high risk of hemorrhage is present, as with CVA patients and severe peptic ulcer patients. It is less effective with patient who have signs of heart failure and its symptoms (Killip class III & IV), and may cause further thrombosis occlusion and hemorrhage in 0.5-1% of patients. It is less effective when being used with late medicated patients (more than 12 hours after onset).

Percutaneous transluminal coronary angioplasty (PTCA)

PTCA is a good alternative for myocardial infarction treatment in order to allow the reperfusion of blood to the myocardium. This method is time efficient and opens the occluded lumen area rapidly. It requires a shorter hospitalization and has fewer side effects, compared with thrombolytic agent, especially with a intracerebral hemorrhage. In addition, PTCA can decrease the nonfatal re-infarction and mortality rate more than a thrombolytic agent can, according to a 6th month follow up (Grines, 1993; de Boer, 1994).

The PTCA procedure starts from using tiny wire piercing through the clot until reaching the end of coronary artery then ballooning the clotting area. The

method is effective in breaking down the clot and allows the blood reperfusion going through arteries and heart again. The clot is broken down into tiny pieces which then can be decomposed naturally. The dilative mechanism of this method may also increase the lumen area which in turn would increase the blood flow rate to the myocardial cells.

Significance of the time to receive the treatment

So shorter the time between the onset of the symptoms, so higher the effectiveness of the treatment of a myocardial infarction, which is a life threatening disease. The damage to myocardium, the morbidity rate, and the mortality rate can be reduced and has been evidenced by many studies of the reperfusion therapy.

According to the retrospective study of the thrombolytic medication effectiveness on the patients during their pre-hospital period (Weaver, 1993), the thrombolytic agent is pharmacologically most effective when used on the shortly after the onset of symptoms. The mortality rate (within 30 day) of AMI patients who were medicated with the thrombolytic agent within the first 70 minutes after onset was 1.2%, whilst the mortality rate of the patients who were medicated after a 70 minutes periode was 8.7%, or in other words: seven time higher. A study, involving 58,600 patients, on the effectiveness of a thrombolytic therapy trial found that a thrombolytic agent had the highest effectiveness rates if the patient was medicated within 1 hour after onset, with a survival rate of 65 per 1000 population. The effectiveness of medication decrease time past after onset, e.g., after 2 hours the survival rate was 37 per 1000 which was a 50% decrease of survival rate (Boersma, et al., 1996). In addition there were follow-up studies conducted of the ST-segment ECG resolution and mortality rate at 1 year after the treatment. The study found that the rate of complete ST-segment ECG resolution for the patients who received a thrombolytic therapy within less than 2 hours, 2-4 hours, and 4-6 hours after the onset of symptoms were 55.6%, 52.1%, and 43% respectively; with a mortality rate 5.1%, 8.0%, and 9.7% respectively ($p < .001$) (Fu, Y., et al., 2001).

Quick decisions to seek treatment, apart from its benefit in reducing the morbidity and mortality rate, are very beneficial for functionality and pathology of the heart. For example, every 29 minutes of late treatment can result in a 1% increase of myocardial infarction. The correlation coefficient between the myocardial infarction

area and late treatment time after onset was $r = .25$ ($p < .0001$) (Raitt, et al., 1996). In a study on the effect of delayed treatment time after onset due to referring a patient to receive PTCA treatment, it was found that the increase of delayed treatment time median of 43 minutes can effect on increasing the cardiac enzyme secretion which indicates an increase of the myocardial infarction area and decrease the ejection fraction performance of the left ventricle at the 6th month post treatment (Liem, et al., 1998).

Phases of delay to receive the treatment

The phases of delay have been previously defined as the time from beginning of the onset to the hospital arrival time of a patient. But a recent study found that there is a different in the relationship between the total delay time and the effectiveness of treatment. The new definition of the phase of delay therefore concentrates on the total delay time from onset of symptoms to receiving definitive therapy, i.e., thrombolytic therapy or PTCA.

The phase of delay can be divided in 3 phases:

1. The patient/bystander recognition and action phase.

This phase begins with the onset of symptoms until the patient or bystander decides to call for an emergency medical service or start transportation to the hospital. This phase contains the actions of patients or bystanders in response to sign or symptoms of a myocardial infarction, starting from patient's perception of some irregularity of the symptoms.

The onset of symptoms is a time of an acute symptom occurrence which arouses the patient to decide to seek treatment. The initial symptoms occurred mostly prior to the onset of symptoms. Interview data's of hundreds of acute myocardial infarction patients revealed that the most patients could identify the onset time, but one third of patients however could not identify it instantly and had difficulties in identifying the symptoms, whether it was initial or the onset, since there may have been several relapses or a constantly continuation of the severity of symptoms.

During the time between perception and actually taking action, each patient may have responded in a different way, which may increase or decrease time

delay. Some patient consulted friends, colleagues, or relatives which could decrease the time delay (Pattenden, Watt, Lewin, & Stanford, 2002). Another way which helped reducing the time delay is a quick decision to go to the hospital or to call for an emergency medical service. The behavior which may increases the time delay is a lack of enthusiasm to seek treatment after onset and could be found in as much as 72% of cases, reasoning that they wanted to rest and to wait and see if the symptoms would change. Only 7 % called for emergency medical service (Meischke, et al., 1995). Besides, seeking consultation from expertises or spouses, and attempted self-treatment such as taking some kind of medicine and increased their physical activities, as the same as, symptom denial, symptom representation, coping attempt and reappraisal of the patients were the important factors which is affecting the increment of time delay during this phase. (Kenyon, Ketterer, Gheoghiade, & Goldstein, 1991).

This phase of delay is very critical since it is the process under the control of the patients themselves. An appropriate strategy to minimize the delays should focus on promoting the correct perception of symptoms, and appropriate response to symptoms of acute myocardial infarction.

2. Pre-hospital action phase

This phase begins with calling for a medical emergency service or start transportation from the premises until arriving to the hospital. The delay in this phase may increase due to telephone communication in calling emergency medical service, response from emergency medical service personnel, or transportation process and time. Delay time could be decreased by effective coordination of the medical emergency service team; readiness, a well prepared system, up to date equipment and most important, a well trained and alertness medical emergency team. Quick arrival at the premises and competence in first aids and treatment during transport the patient to hospital is of outmost importance to minimize the time of this particular phase.

3. Hospital action phase

This phase begins as soon as the patient arrives at the hospital and ends with receiving a definitive therapy. Health care personnel in emergency units are the key responsible persons during this phase. Delay during this phase may occur due to the hospital organization and system, especially diagnosis and admission steps since inadequate practical or inappropriate decision making. As a result, many patients may

have arrived at the hospital just in time but did not receive a thrombolytic or PTCA therapy in the appropriate time which in turn resulted in fatal or irrecoverable consequences.

Studies of the three phases of delay time, most of studies focused on a combination of phase 1 and 2, i.e., time begins from onset until arriving at the hospital. According to Walsh, et al. (2004), the relationship between the 1st and 2nd phase of delay time was found to have a moderate correlation with a coefficient of: $r = .36$ ($p < .05$). The 1st phase of delay time had a strong correlation with total pre-hospital phase of: $r = .87$. The median of the total pre hospital time (total 1st and 2nd phase) was 4 hours and 4 minutes which was consistent with many other studies which revealed that the mean of time between the onset of symptoms and arriving to hospital are 6 to 29 hours, with median of 2 to 6.4 hours (Dracup & Moser, 1991; GUSTO Investigators, 1993; Goldberg, et al., 1999). Furthermore, studies were also conducted in various countries with different social and cultural characteristics on comparing the total pre-hospital time (total 1st and 2nd phase) which revealed a slight difference of total pre-hospital time delay among United States of America, United Kingdom, Japan, and South Korea. The median of delay time were 3.5, 2.5, 4.5 and 4.4 hours, respectively (Dracup, et al., 2003)

Factors influencing the decision to seek treatment for acute myocardial infarction patients

Illness perception

Acute myocardial infarction is a life threatening disease and therefore a rapid response and treatment is of the most importance. To receive rapid action and treatment depends on many factors; i.e.: the decision to seek treatment, transportation time, or the emergency medical service system etc. as mentioned in previous paragraphs. However, the most important factor is the patient decision when to seek treatment which also depends on how the patient may or may not perceive the onset of symptoms and how the perception is affecting the response or coping with such an onset.

Perception: The word perception stems from Latin *perceptio*, *perception*, generally meaning “to take” and has been defined by various points of view of countless psychologists and scholars from around the globe.

King (1981, cited in Kobkul Phancharoenworakul, 1985) gave the meaning of perception as a thought and mental process of human beings, expressing *purpose* and *willingness*. The perception of each individual is the expression of subject matter concerned with such a person. This perception process collects and interprets the information from external sensation and memory.

Kanya Suwannasang (1989, cited in Kitinan Sittichai, 1997) stated that perception is an interpretation based on past experience of the sensational stimulus and resulting in cognition or recognition of the meaning.

Schermerhorn, Hunt, and Osborn (1982, cited in Kanjana Simajareuk, 1995) stated that perception is a basic psychological process to interpret the meaning of sensational stimulus acquired and then form a significant experience for such a person. Perception makes people different, there are no two persons who have exactly the same perception of one stimulus because the interpretation is based on an individual experience.

Watcharee Submee (1990, cited in Kanjana Simajareuk, 1995) defined that perception is a interpretation of sensible input to a meaningful information. The interpretation needs experience and learning. Without experience and learning there is no perception, only mere sensation. The perception is also a selective process, we do not perceive every sensational stimulus, only a selected sensational stimulus we want to perceive.

According to the above definitions of perception, the similarity is perception take place only after it has been activated by the stimulus. By interpreting a stimulus to a correct perception, many elements, such as sensational nerve alertness and precision, stimulus characteristic, are required. However, the most important is the existing experience or knowledge of that illness which is an acute myocardial infarction in this research. The experience may come from the past illness of one self, a relatives, colleagues or close friends.

According to the self regulating theory, the commonsense model of illness representation proposed by Leventhal, et al. in 1994, the cognitive illness representation is comprised of five components:

1. **Illness Identity:** This component concerns the patient's thoughts about initiate characteristics of the symptoms by assessing from the patient's explanation about the onset situation, such as heart attack and other related symptoms as chest pain or shortness of breath which can point out the nature of illness perception of patients in conceptual perception such as heart attack and concrete symptom perception such as chest pain. Illness identity or illness labeling of patient was an important key to assist patient to cope with the illness effectively.

At the early stage of acute myocardial infarction, the symptoms may be perceived as the other disease such as gastritis or myalgia which is a cause of delay in decision to seek treatment (Burnett, et al., 1995; Meischke, et al., 1995; Dracup & Moser, 1997; Petrie & Weinman, 1997). The interpretation of symptoms is under influence of past experience concerning heart disease of themselves or from the family members or from various other persons and medias (Leventhal, et al., 1984). At the onset of acute myocardial infarction, if the patient perceive the symptoms as a life threatening, such perception can influence the appropriate planning and coping which is promptly seeking for treatment. The perception of illness identity is therefore an important component of illness representation which has effect to the decision to seek treatment (Petrie & Weinman, 1997).

The symptoms at the onset of acute myocardial infarction may vary depend on individual. Some patients have clearly identified symptoms of ischemia or infarction of myocardial cell such as chest pain or chest discomfort. This pain can radiate to other part of the body such as arms, jaws, shoulders and back but some have unclearly identified symptom such as dyspnea, nausea, sweating, syncope or palpitation without chest pain. On a study of illness labeling and response to symptoms of the female patients with acute myocardial infarction revealed that the most of female patients (65%) labeled the chest pain as heart disease, but 36% of them labeled shortness of breath and nausea as heart disease which is beneficial in

increasing the attention to the symptoms and the perception of risk condition for acute myocardial infarction (Meischke, et al., 1999).

In Thailand, the study concerning an acute myocardial infarction experience and perception revealed that the patient perceived the symptom at the onset of acute myocardial infarction as “syncope” (Wirongraung Nathongkham, 2000). According to a study of Uma Juntawiset (1996), patients described the onset of acute myocardial infarction as ulcer on heart, impaired heart, ischemic heart, obstructive coronary artery which is a severe disease but preventable.

The typical symptoms of acute myocardial infarction do not cause any difficulty in labeling and identifying, however the atypical symptoms do and may cause misleading labeling and identifying, the patient may perceive the symptoms as another disease, which in turn may result in delaying the decision when to seek treatment. The mismatch between expected AMI symptoms and actually occurring symptoms in view of location, intensity, related symptoms and quality of symptoms may also influence the time delay in a negative way to seek treatment (Johnson & King, 1995). Therefore, educating patients about various AMI symptoms, especially about the atypical or less common symptoms is therefore necessary and important. It would enable patients to have a correct perception on how to identify their illness so that they may respond at the onset of the symptoms.

Other problems in past studies of time delay for AMI treatment was the unsuccessful classification between the symptoms of patients with a long delay time and patients with prompt decision to receive a definitive therapy. Important is not how often it occurred but how the cognitive model works out for the patients to identify their acute myocardial infarction symptoms correctly (Petrie & weinman, 1997). In addition, Dracup, et al. (1995) found that it is a difficult issue to promote patients to make a quick decision to seek treatment at a hospital. Fact is that the first onset will occur rather slowly and gradually instead of suddenly and intensely. The patient may feel some relieve periodically before a relapse will occur. It is very difficult for most patients to interpret and perceive this correctly and therefore may cause to delay the decision when to seek treatment.

2. Causes: For most people, a heart disease is an awful and life threatening experience. If people are confronted with an unexpected bad experience

such as being hurt, having an accident, or a life threatening or severe illness, these experiences will influence them to find the cause of the incident. The understanding of the cause of such incidences can also pacify their anxiety and help forecasting the incidence's future. When a patient has been diagnosed with having an acute myocardial infarction, they will naturally have some thoughts about the cause of their illness. The process of finding the cause of their AMI can create a sense of experience and the ways to solve it. Developing thoughts concerning the cause of AMI is based largely on an existing experience and knowledge like information received from relatives or mass media, etc. The classic image of people in public or as seen in the mass medias who have AMI are usually be some executives who are stressed out, working hard and fast to catch up with the ever changing socioeconomic system, the persons who have inadequate resting time and have an inappropriate life style such as smoking, high fat contents dietary, obesity and pay inadequate attention to health care. Statements like this are consistent with the findings of Uma Jantawiset (1996) study about the patients' meaning of acute myocardial infarction. She found that 13 out of 18 patients could explain that an inappropriate health and living pattern were the main causes of their illness. Apart from living behavior, the patients also indicated other causes, such as diabetes mellitus, hard work, wind compression within the chest, and injury. However, some patients were not able to identify the cause of acute myocardial infarction. Another study about the cause identification of chest pain experience by Wiroungrong Nathongkham (2000) reported to have identified six causes: Life pattern and style, Karma, destiny or fortune, supernatural power, genetic, and body equilibrium. These information about a cause for a heart disease were available in the mass media which are easy to find and understood. This way patients can consider and compare these cause for heart disease information at the onset much easier than other diseases such as diabetes mellitus or cancer for instance. Even though the AMI information is readily available through the mass media, according to Uma Junthawiset (1996) study, 3 out of 18 patients believed that acute myocardial infarction was a preventable disease and claimed that their illness occurred due to lack of knowledge about the risk factors of the disease. They further commented that the arrangement of public communication about the prevention and health promotion to people about acute myocardial infarction by health care services were not sufficient

and efficient enough. As a result, they could not have prevented themselves from getting an acute myocardial infarction.

According to a study about the cause of an acute myocardial infarction, patients rated the score on 24 items of cause in total. It found that stress had the highest score next to inappropriate living pattern and life style such as high fat content dietary, inadequate exercise, smoking cigarettes, obesity, and poor dietary (De Valle & Norman, 1992). The causal attribution was found to relate to the change in health care behavior six months after the acute myocardial infarction incidence. Most patients believed that an acute myocardial infarction was mainly caused by inappropriate living pattern and life style which significantly related to improvement of health care behavior such as increase the frequency of exercise and get the appropriate dietary. In addition, stress was the most common attribution as the cause of acute myocardial infarction made by patients. However, both stress and genetic cause identification were not relationship with the improvement of the health care behavior after an acute myocardial infarction incidence (Petrie, Weinman, & Sharpe, 1996).

3. Time-line: This component relates to the duration of time perception of patients during the progress of illness, e.g. their perception on whether the illness is acute or chronic. The perception and interpretation of patients that an acute myocardial infarction symptoms as a part of the chronic illness can cause a delay on the decision to seek treatment (Johansson, Stromberg, & E., 2004). Since the perception as a chronic disease may come from the low to moderate intensity of symptoms, the patient may decide to wait for monitoring further symptoms rather than to seek prompt treatment. On the contrary, Quinn (2005) and Walsh, et al.(2004) found that the time-line component of cognitive illness representation had no relationship with the decision to seek treatment of acute myocardial infarction patients.

4. Consequences: This component is about personal beliefs concerning the severity of the illness and expected consequence to the physical, psychological and social functionality. According to Walsh, et al. (2004) study on factors influencing the decision to seek treatment for acute myocardial infarction patients, the relationship between the perception component of the commonsense model of illness representation, and the decision to seek treatment. They reported that the consequence expectation is only components that had a correlation with delayed time for treatment

($r = .50$, $p < .01$). According to the results, patients were of the opinion that if they perceived the serious consequences of a myocardial infarction, they would have made a decision in a much shorter time. Fear is the most powerful motivation to decide to seek treatment when a myocardial infarction occurred, which did not according to the findings by Dracup & Moser (1997) who was found that the fear of consequences caused more delay to seek treatment (Dracup & Moser, 1997).

5. Control/Cure: This component is concerned with whether or not symptoms can be controlled or cured and on which level. The past research found that the control/cure component of cognitive illness representation had no relationship with the decision when to seek treatment of acute myocardial infarction patients (Quinn, 2005; Walsh, et al., 2004).

In developing knowledge and understanding of illness perception based on Leventhal (1984), who has found that, based on their perception of the identity representation of illness and the expected time-line of symptoms, most of patients imagined the onset of the symptoms as an acute symptom. As a result, the early expectation of their illness is often that either the patient can go along with the time-line and get naturally and gradually cured or that an effective treatment can control/cure the illness.

Petrie and Weinman studied the various components of illness perception which were conducted during various times after the onset of symptoms, i.e.: perceptions; shortly after onset of symptoms, and 3, 6, and 12 months after the onset. In comparison, in two illness perception components were insignificant changes, i.e.: The consequences of illness perception with a slightly decreased, the illness identity perception had decreased during the early stages but then bounced back to a normal level within 12 months. The control/cure of illness perception which decreased constantly along the 12 months after the onset of symptoms and timeline of illness perception were drastically increased during the next 12 months were the two illness perception components with a significant change (Petrie & Weinman, 1997).

Emotional illness representation has been found to influence the decision to choose an illness coping strategy as well as a cognitive illness representation. According to Walsh, who studied factors influencing the decision to seek treatment for acute myocardial infarction (Walsh, et al., 2004), the results

revealed that patients who had a high level of emotional illness representation, such as anxiety, stress and panic, needed a shorter decision time to seek treatment after the onset of AMI. These results were consistent with Burnett, et al. (1995) who studied the differences between fast and slow responses of patients to AMI. Patients with a fast response to acute myocardial infarction (quick decision to seek treatment) had a higher level of emotional illness representation than patients with slow response to AMI.

As mentioned earlier, patients perceived their illness and represented it from existing experiences about that illness including the knowledge had from the surrounding milieu. The surrounding milieu comprised of personal factors and other factors such as clinical status, socio-cultural roles, expectation, including illness representation from past experiences. These factors influenced the patients' strategy to response to their illness.

There have been lots of studies on influencing factors and duration of delay time in the decision making when to seek treatment for AMI and were with both, agreeable or contradictory results.

The personal factors

Age: In many studies on social factors and population characteristics influencing the decision to seek treatment for acute myocardial infarction and other cardiovascular diseases, most studies found that older people have a longer time delay in making a decision when to seek for treatment than of younger people (GISSI, 1995; Dracup & Moser, 1997). The finding was that elderly patients might have a hidden onset of the acute myocardial infarction symptoms because of the symptom of other disease which occurred in the same time. So, elderly patients found it difficult to identify or clarify the acute myocardial symptoms. As a result, difficulties with the realization and perception of cardiac symptoms influenced delay in decision making to seek treatment for AMI patients (Dracup & Moser, 1997). The study in Thailand, on the other hand, found that age had an insignificant relationship with the pre-hospital time before receiving treatment of AMI patients (Changchaywong, 2002).

Gender: According to the past studies, females took more time to make a decision to seek treatment than males. (Dracup & Moser, 1993; GISSI, 1995; McKinley, 2000). The reason for it was that, compared with males, females were influenced by a stronger will to control their own situation, including self-treatment or

ignoring the symptoms. In regards to self treatments, females may have consulted another person prior to make a decision to seek treatment (Dempsey, Dracup, & Moser, 1995), and generated or represented the acute myocardial infarction symptoms as they experienced to the non-cardiac symptoms (Hendel, 1990). In addition, they did not want to disturb family members to look after the transportation to a health care utility which lengthen the time delay in seeking treatment. The risk factor information of AMI for females was less than for males, since many of the information focused on stress and smoking which are more likely to be male's risk factors whilst the female risk factors are to find in dietary, lack of exercise, and obesity. In addition, compared with males of the same age, acute myocardial infarction occurred less often in pre-menopause females. At the over 65 age group, AMI for females were higher than for males. AMI incidence in the 60 to 70 age group of female was equal to 10 years younger males. This could result in a belief that AMI is a "male" disease, making females to represent their illness as an other symptoms than an acute myocardial infarction symptoms, which in turn, increased the possibility to misrepresentation and misdiagnosing of the symptoms. (Pittman & Kirkpatrick, 1994, cited in Uma Jantawiset, 1996). In Thailand, contrast with the finding of abroad research, Ormanee Changchaywong found that gender had an insignificant relationship with the pre-hospital time before receiving treatment of AMI patients (Changchaywong, 2002).

Self regulation: The commonsense model of illness representation

This theory was developed by Leventhal et al. in 1984. The development of illness representation originated from the communication study of fear. High fear messages were more efficient in changing attitudes toward health improvement direction compared with low fear messages. However, attitude changes caused by fear message occurred in a short period: 24 to 48 hours after receiving the fear message. Actions in response of fear messages were only taken at first encounter. At the second encounter, the message receiver was encouraged to arrange a more concrete action plan. For example, when noticing the message stated that smoking would increase the risk of lung cancer, the message influenced the message receiver only at the time he saw the message. He or she may quit smoking for the time being but returned to smoking after that. If receiver received the message repeatedly he or she started to

make a concrete plan to quit smoking. However, since fear and fear-induced attitude changes can disappear in a short period, the researcher concluded that coping with the action plan has no relationship to fear, rather with change of thoughts and health threatening representation. Health threatening representation incorporated with an action plan became a decisive factor to the health threatening coping action. (Diefenbach & Leventhal, 1996; Leventhal, 1997).

Self regulation theory: The commonsense model of illness representation (Leventhal, et al., 1984) was based on the assumption that a patient is an active illness problem solver. The related health behavior was expressed by the attempt to close the gap between the current illness representation and the planned future health status. A coping strategy chosen by the patient is the outcome of the illness representation and an appraisal of their illness. The outcome was fed back into the perception process to regulate the future coping response. The dynamic aspect of this regulating-coping process is a highlight of the commonsense model of illness representation.

In order to gain an insight into any theory, the basic assumption had to be clearly understood. The commonsense model of illness representation is based on four basic assumptions (Leventhal, et al., 1984).

1. Active processing: According to this, the basic assumption is that the behavior and experiences of a person arises from their information processing system which is integrated the present stimulus with the memory gathered from past experience and milieu context. The coping responses emerges from the self regulation process on a time to time basis, say, when a stimulus such as an illness is sensed, the perception occurred as the results of a processed and behavioral and emotional response which was activated in feeding it instantly back into such a stimulus, when a new stimulus occurred the new response were fed back eventually.

2. Parallel processing: Is a two information processing system, running parallel and simultaneously. The first process is an attentive conceptual information process comprised of knowledge, thoughts, understanding, semantic knowledge or memories which reflects a general and abstract knowledge concerning a personal conceptualization. This knowledge or memories are influenced by ones personal culture. In addition, this process is comprised of planning the various steps to cope with a health problem. The second process is an emotional process which

automatically emerges, comprised of episodic knowledge or memories from personal past experience. In addition, this process is comprised of various sensations such as contact sensation, fear sensation, and stimulus response on health problem.

3. The three stages of processing:

- Illness representation: During this stage, a person perceives the illness stimulus in two aspects simultaneously, i.e.: Cognitive illness representation and emotion illness representation. The representation process depends on knowledge and memories concerning meaning interpretation and episodic knowledge/memories. When the stimulus occurs, the mental representation of such stimulus is processed in response to internal and external stimulus which is life threatening, such as chest pain. When the person suffered from acute myocardial infarction, semantic knowledge/memories, for instance, knowledge of person concerning risk factors of acute myocardial infarction cause would progress together with episodic knowledge or memories, for instance past experience of chest pain can enable such person to represent and identify the attribute of symptoms clearer.

- Action planning and coping: During this stage, planning and action according to plan in coping and response to illness is carried out both, in symptom management and emotional regulation aspect.

- Appraisal: During this stage, the effectiveness of illness coping or response is appraised by comparison the outcome before and after illness coping to diminish the threat of illness.

When persons represent the illness as health threat, each person chooses a different strategy in coping with such a threat. These strategies may be used unintentionally or inconsiderably about its consequence. According to Meischke et al. in 1995, the first strategy for coping with acute myocardial infarction symptoms is mostly unintentional, e.g.: resting, stay still, taking sublingual medicine or other medicine as effective strategies to cope with past analogous symptoms. But eventually, the patients had more thoughtful and attentive behavior such as consult the expert, call for emergency medical service, or drive to a hospital. If the first strategy chosen to cope with symptoms is not successful, the illness representation was changed as the severity of the symptoms and the life threatening potential of symptoms is increasingly perceived.

4. Hierarchical processing: It starts with a simple concrete level comprising of automatic mechanism to a highly abstract level which needs a conceptual process such as language, decision making, and synthesis. The process of both levels may be in conflict if a person is ill. For example, patients may tell that antivirus medication is good since it can destroy a virus and increase the survival rate whilst in fact they may feel terrible due to the side effect of the drugs.

Conclusion

According to literature reviews, acute myocardial infarction is a life threatening disease and a main cause of acute fatality in all countries. In addition it can have an effect on quality of life after treatment. However, to-date diagnosis and treatment of acute myocardial infarction develops continuously, resulting in invention of new treatment such as thrombolytic agents and Percutaneous Transluminal Coronary Angioplasty (PTCA). These treatments can drastically reduce morbidity and mortality rate as well as reducing the impact on the quality of life. However the effectiveness of treatments depends mainly on the time to make a decision to seek treatment after the onset of the symptoms. Although the acute myocardial infarction treatment technology made huge progress, many patients prolong their decision time to seek treatment and therefore lowering their chances to survive through effective treatments drastically. Delay to receive treatment can also occur during various phases: the decision phase which accounts for the time from the patients perceiving the symptoms till making a decision to seek treatment, transportation phase which accounts from the patients decide to seek treatment till reaching a hospital, and in-hospital phase which accounts the time from arriving at a hospital till the time of starting definitive therapy. However, the time utilized by patients to make a decision to seek treatment is yet the most critical. According to studies of factors influencing the decision to seek treatment for acute myocardial infarction patients, personal factors such as age and gender, clinical status factors such as severity of the symptoms, the past illness history, and the cognitive illness representation factors of the patients were the influencing factors to make a decision to seek treatment. The illness identity, the cause of illness, the time-line of illness progress, the consequences after illness and the control/cure ability of the illness were components of the cognitive illness

representation according to the self regulation theory of Leventhal et al.(1984). This theory was based on the hypothesis that if a person had a correct illness representation, he or she could handle the illness and plan the treatment action for such illness correctly. Therefore, the acute myocardial infarction patients who had a correct representation from the onset of symptoms could make a short time decision after onset to seek treatment had a big advantage in surviving. Studies of various factors which may influence the decision on when to seek treatment after the onset of acute myocardial infarction was therefore necessary and important. The study yielded basic information on how to develop an effective program on how to reduce the decision time for seeking treatment of an acute myocardial infarction patients. Possible fatal consequences can only prevent if an early as possible and appropriate treatment can be provided.

CHAPTER III

METHODOLOGY

This study was a descriptive design aiming to explore factors effecting on decision to seek treatment of acute myocardial infarction patients

Population and Sampling

The population in this study was acute myocardial infarction patients who were admitted at medical department of three hospitals located in Phitsanulok Province, Uttaradit Province, and Nakornsawan Province, namely, Buddhachinaraj Hospital, Uttaradit Hospital, and Sawanpracharak Hospital, respectively.

Inclusion criteria's

1. Patients who voluntarily agreed to participate in the study
2. Patients who were either 20 years old and older, both, male or female, and were diagnosed to have a cardiac disease by the cardiologist as suffering from an acute myocardial infarction, showing both, either ST-elevation or a non ST-elevation on their electrocardiogram (ECG).
3. Patients who had first experience or recurrent acute myocardial infarction.

To be diagnosed having an acute myocardial infarction, either one of the following criteria's had to be met:

1. Typical rise and gradual fall (troponin) or more rapid rise and fall Creatininkines-MB (CK-MB) of biochemical markers of myocardial necrosis with at least one of the following:

- ischemic symptoms such as chest pain or chest discomfort
- development of pathologic Q waves
- ECG changes indicative of ischemia (ST segment elevation or depression); or
- coronary artery intervention (e.g. coronary angioplasty)

2. Pathologic findings of an acute myocardial infarction

Exclusion criteria's

1. Still in the acute phase of the disease or still having circulatory system instability, for instance, still have chest pain and the physician dose not allow the patient to have any activities which may cause a harmful irregular heartbeat or would induce a too high or too low blood pressure.
2. Cognition or communication disorder or having psychotic symptoms.
3. Undergoing respiratory tube or machine treatment.
4. Any pathological conditions which may cause an inaccurate Troponin-T enzymes examination, for instance, renal failure, post-resuscitative, or post-surgical.

Sample size

The sample in this study had qualification with met the inclusion criteria's. The subject was recruited by purposive sampling according to inclusion criteria. The sample size was calculated by using power analysis method to reach an adequate power for regression analysis (Polit & Beck, 2004) as the following: significant level = .05 and level of power = .80. The effect size was given to moderate, which was .13 . The calculation yielded 105 cases. There were 7 independent variables in this study, i.e., age, gender, and five components of cognitive illness representation which were; identity of illness, cause of illness, time line of illness, consequences of illness, and control/cure ability of illness.

Settings

The research data were taken from three tertiary hospitals in lower-northern part of Thailand comprising of: Buddhachinaraj Hospital, Phitsanulok province with a 900 hospital bed capacity and continuously increasing the acute myocardial infarction admission cases from 665, 905, and 976 cases in 2002, 2003, and 2004, respectively (Database center, Buddhachinaraj hospital, Phitsanulok province); Uttaradit Hospital, Uttaradit province with a 600 hospital bed capacity and had the acute myocardial infarction admission cases 237, 254, and 270 cases in 2002, 2003, and 2004, respectively; and Sawanpracharak Hospital, Nakornsawan province with a 700 bed hospital bed capacity and had the acute myocardial infarction admission cases 170, 217, and 245 cases in 2002, 2003, and 2004, respectively.

In this study, the number of the subjects were collect from each setting showed as follow: 68 cases from Buddhachinaraj Hospital, 26 cases from Uttaradit Hospital, and 11 cases from Sawanpracharak Hospital.

All three hospitals had the cardiologists on duty and had separated Coronary Care Unit (CCU) for acute myocardial infarction patients treatment (except Sawanpracharak Hospital). In actual situation, some acute myocardial infarction patients had to be hospitalized in Intensive Care Unit (ICU) or general in-patient wards due to limitation of bed numbers in Coronary Care Unit. As a result, data collection had to be carried out either in Coronary Care Unit, Intensive Care Unit, or the general in-patient wards of medical department where the acute myocardial infarction patients could be admitted to. The treatment of acute myocardial infarction was carried out by giving Streptokinase which is thrombolytic agent by considering the symptoms, ECG patterns, and cardiac-enzyme examination, indicating myocardial ischemia or infarction, like a higher than normal of CK-MB enzyme level or positive Troponin-T/Troponin-I. Other important consideration was given to the duration of time from the onset of the symptoms until the eventual hospitalization. If the duration of time took less than six hours, the physician gave the patients a dose of streptokinase as soon as possible.

Research instruments

Research instruments used in this study were comprised of:

1. Demographic questionnaire: developed by researcher comprising of 16 questions as follows:

- Personal data which including age (numbers of year), gender, marital status, educational level, occupation, average monthly income per month, persons who was the companion of the patient during the onset of symptoms, persons who decided the patient must be taken to hospital, and persons who transported the patient to the hospital.

- Clinical status and health behavior, like number of hospitalization days from the date of admission until the date of data collection, the past illness history prior to this hospitalization, smoking history, and illness history of family.

2. The ‘Illness Perception Interview of Acute Myocardial Infarction Patients’: developed by the researcher based on Leventhal’s commonsense model of illness representation, a previous study, done by Weinman in 1996, and included interviews with four acute myocardial infarction patients in Buddhachinaraj hospital about illness perception were used as guidelines for developing the illness perception interviews with acute myocardial infarction patients, comprised of 44 question aimed to evaluate the five components of illness perception as follow:

1. The “illness identity” components, the perception of the of illness characteristics, signs and symptoms described by the patients. This component included listed 13 items of myocardial infarction symptoms. Patients were asked to assess whether they had experienced signs and symptoms of acute myocardial infarction or not.

The total score of this component was the summation of signs and symptoms the patients have experienced. Score had a range from 0 to 13 points. Patients who perceived more than one or many symptoms had a higher tendency to recognize the signs and symptoms they perceived may be related to a cardiac disease and could therefore accelerated the time patients seeking treatment at a hospital.

2. The “cause” components covered opinions or beliefs of patients concerning the cause of illness. In this component comprised of total 10 positive items. Each item asked patients whether or not they perceive it as a cause of illness.

3. The “time-line” component covered the temporal perception of illness, how long the illness took, acute or chronic. In this component comprised of total five items, four positive items (the 2nd to 5th item) and one negative item (the 1st item), with a score range from 5 to 25 points. Higher scores indicated a higher perception level of illness as a chronic one.

4. The “consequences” components covered the expectation of the outcome and the various dimensions of effects after illness. In this component comprised of total eight items, seven positive items (the 1st to 3rd, 5th to 8th item) and one negative item (the 4th item), with a score range from 8 to 40 points. Higher scores indicated the patient’s perception of the severity of the consequences of his or her illness.

5. The “control/cure” components covered the patient perception of the ability to control or cure the illness in remedy direction. In this component comprised of total five items, three positive items (the 1st to 3rd item) and two negative items (the 4th to 5th item), with a score range from 5 to 25 points. Higher scores indicated a higher perception of patient’s ability to control or cure the illness.

Questions of component 2 to 5 provided a choice of agreement levels, offering: strongly agree, agree, uncertain, not agree, and strongly not agree. The scoring are as follow:

	Positive statement	Negative statement
Strongly agree	5	1
Agree	4	2
Uncertain	3	3
Disagree	2	4
Strongly disagree	1	5

The total scores in each component of 3rd – 5th are the average scores of all answers to the questions in that component.

Validation of Research Instrument

1. Instrument Validity

The illness perception interview of acute myocardial infarction patients was submitted to an experts committee to assess the content validity. The experts committee comprises three experts from different field as follows:

- 1 person of a cardiologist
- 1 person of nurse lecturer who is specialized in surgical cardiac patient nursing and Leventhals self regulation theory.
- 1 person of nurse practitioner specialist in cardio-medical nursing

The researcher modified and corrected the interview form according to the expert committee’s recommendations.

2. Instrument Reliability

The interview form in this study was used with 20 acute myocardial infarction patients who met the inclusion criteria's as of the subjects. The results of Cronbach's alpha showed the reliability coefficient of the component of illness representation as follows:

- Illness identity component Questionnaire = .70
- Causes component Questionnaire = .72
- Time-line component Questionnaire = .78
- Consequences component Questionnaire = .83
- Control/cure component Questionnaire = .58

Data collection

The researcher collected the data by self between May 2005 and September 2005. The data collecting procedure were conducted as follows:

1. The researcher sent a letter of introduction and requested for permission to collect data from the faculty of graduate studies of the Mahidol University to Buddhachinaraj Hospital, Phitsanulok Province; Uttaradit Hospital, Uttaradit Province; and Sawanpracharak Hospital, Nakhon Sawan Province.

The management of data collection from each setting was done on Saturdays and Sundays in Sawanpracharak Hospital, Tuesdays at the Uttaradit Hospital, and Mondays, Wednesdays, Thursdays and Fridays at the Buddhachinaraj Hospital. The researcher rang the telephone to confirm the number of acute myocardial infarction cases who met the inclusion criteria from medical department of Uttaradit Hospital and Sawanpracharak Hospital one day before collected the data.

2. After having subject's permission to collect the data, the researcher met the matron of each relevant ward for introduction and advice on details on the research methodology.

3. Researcher met the subjects who met the inclusion criteria, introduced self, talking with the patient to create a good rapport, relationship and familiarized the subjects with the procedure. The researcher advised the subjects on objective, time line, and benefit of the research project, ask for participation, offered to accept or deny

their participation without any consequences to their health care and treatment and advising on the subjects rights.

4. If the subjects agreed to voluntarily participate in the research, they had to sign a consent form and then were interviewed for about 20 to 30 minutes about their illness perception of acute myocardial infarction. If the subjects feel any discomfort or were unwilling to carry on with the interview, they could stop it at any time. If the subjects noticed angina pectoris, dangerous signs from the ECG, change of consciousness, or vital life threatening signs, the researcher would stop interview, and would have given proper care in conjunction with the health care team on duty. Researcher assured the subjects and family members that they could quit the research without any consequences to health care and treatment. However, in this research had no drop-out of the subject throughout the data collection process. After concluding the interview the researcher thanked the subjects for making a valuable contribution for this research.

5. After the completion of the data collection, all data were further analyzed and interpreted statistically.

Patient's right protection

The researcher was aware and respected the subject's rights from the beginning of the data collection until the presentation of the result. Researcher advised on the subjects of the objectives and the data collection procedure and then asked for research participation without any forcibly measure. If the subjects agreed to participate in the research, they would sign a consent form. The researcher further advised the subjects that they can quit their participation any time they want without any consequences from health care service. All data collected were to be kept confidential by using codes instead of real names and only the researcher could access the subject's data. The discussion, presentation, and publication of the research result were done by summing it all up during an overall view of the results.

Data analysis

The data were statistically analyzed through statistical commercial software.

1. The analysis of the demographic data, clinical status and health behavior data was done by frequency distribution, percentage and arithmetic mean.

2. The identity analysis of the illness components was done by frequency distribution and percentage.

3. The relationship between personal factors, like age, gender, and the four components of illness perception as identity of illness, timeline of illness, consequences of illness, and control/cure ability of illness, against the decision to seek treatment for acute myocardial infarction were analyzed by using Pearson's Product Moment Correlation.

4. The predictive of personal factors like age, gender, and the four components of illness perception which were the identity of illness, the time line of illness, the consequences of illness and the control/curing ability of illness against the decision to seek treatment for acute myocardial infarction were analyzed by using multiple regression. (Testing assumptions of multiple regression analysis revealed at Appendix D)

5. The decision to seek treatment for acute myocardial infarction was done by estimating the time in minutes from the onset of symptoms to the decision and then this data were analyzed by using arithmetic mean, median, and standard deviations.

In finding the relationship between gender and the decision time to seek treatment, gender variable which was nominal scale level was modified to dummy variable by coded male = 1, and female = 0.

CHAPTER IV

RESULTS

Results of the study

The objectives of this study were to examine the correlation and predicting the ability of the demographic characteristics of the subjects, which were age, gender and the components of the cognitive illness representation against the decision to seek treatment for acute myocardial infarction patients (AMI). The results are presented in six hierarchical sections:

Section 1: The demographic characteristics of the subjects

Section 2: Clinical status and health behavior of the subjects

Section 3: The cognitive illness representation of the subjects

Section 4: Duration of time to seek treatment of the subjects

Section 5: Relationships between age, gender and the components of cognitive illness representation and the decision to seek treatment

Section 6: Predicting ability of independent variables on the decision to seek treatment for acute myocardial infarction patients

Section 1: The demographic characteristics of the subjects**Table 1:** Number and percent of the subjects, classified by age, gender, marital status, educational level, occupation, monthly income of family, companion present at the onset of symptom, and person who transported the subjects to the hospital (N =105)

Subject's Characteristics	Number	Percent
Gender		
Male	67	63.8
Female	38	36.2
Age (years)		
35-44	7	6.7
45-54	25	23.8
55-64	27	25.7
65-74	29	27.6
75-85	17	16.2
Min = 35, Max = 85, Mean = 61.9, S.D. = 11.2		
Marital status		
Single	2	1.9
Married	87	82.9
Widowed/Divorced/Separated	16	15.2
Educational level		
Non	9	8.6
Primary school	75	71.4
Secondary school	9	8.6
Vocational diploma	7	6.7
Bachelor degree	4	3.8
Higher than bachelor degree	1	1.0

Table: 1 Number and percent of the subjects, classified by demographic characteristics (N = 105) (continued)

Subject's Characteristics	Number	Percent
Occupation		
Retired	35	33.3
Agriculturist	31	29.5
Government officer	15	14.3
Merchandise	9	8.6
General wage worker	4	3.8
State enterprise/business	3	2.9
Others	8	7.6
Monthly income of family (Baht)		
Unable to estimate income /		
Unemployed	56	53.3
< 5,000	20	19.0
5,001- 10,000	12	11.4
10,001- 15,000	4	3.8
15,001- 20,000	5	4.8
20,001- 50,000	7	6.7
≥ 50,001	1	1.0
Companion at the symptom onset		
Spouse	59	56.2
Nobody	19	18.1
Children / Parents	10	9.5
Other cousins	10	9.5
Friends / Coworkers	4	3.8
Other persons (neighbor, etc.)	3	2.9

Table 1 Number and percent of the subjects, classified by demographic characteristics (N = 105) (continued)

Subject's Characteristics	Number	Percent
Person who transported the subject to hospital		
Children / Parents	43	41.0
Spouse	40	38.1
Nobody	10	9.5
Other cousins	5	4.8
Friends / Coworkers	4	3.8
Other persons (neighbor, etc.)	3	2.9

According to Table 1, most of the subjects (63.8%) were male. Their ages ranged from 35 to 85 years (mean = 61.9, S.D. = 11.2). More than half of the subjects (53.3%) were in the 55 to 74 age group. The majority of the subjects (82.9%) were married. 71.4% had finished primary school and 32.4% had no occupation. More than half of them (53.3%) unable to estimate monthly income of family or unemployed. At the symptom onset, 56.2% of companion was their spouse. And the most persons who transported them to hospital were their children (41%).

Section 2: Clinical status and health behavior of the subjects**Table 2** Number and percent of the subject classified by clinical status and health behavior of the subjects (N = 105)

Clinical status and Health behavior	Number	Percent
History of previous myocardial infarction		
No	91	86.7
Yes	14	13.3
Number of days staying in hospital (before the interview)		
1 - 3	65	61.9
4 - 6	31	29.5
7 - 9	5	4.8
≥ 10	4	3.8
The past illness history *		
Hypertension	57	54.3
Other heart diseases**	31	29.5
Hyperlipidemia	29	27.6
Other diseases	27	25.7
Diabetes mellitus	26	24.8
Chest pain on exertion	21	20.0
History of smoking cigarette		
Used to smoke	41	39.0
No smoke	37	35.2
Smoke until now	27	25.7

Table 2 Number and percent of the subjects classified by clinical status and health behavior of the subjects (N = 105) (continued)

Clinical status and Health behavior	Number	Percent
Family history of heart disease		
No	85	81.0
Yes	17	16.2
Don't know	3	2.9
Type of myocardial infarction		
ST Elevation myocardial infarction (STEMI)	57	54.3
Non-ST Elevation myocardial infarction (NSTEMI)	48	45.7
Area of myocardial infarction		
Inferior wall	46	43.8
Others areas	25	23.8
Anteroseptal wall	18	17.1
Anterior wall	16	15.2
Results of cardiac enzyme examination		
Troponin-T, Troponin-I		
- positive	99	94.3
- negative	6	5.7
CK-MB		
- higher than normal	53	50.5
- don't examine	30	28.6
- normal	22	21.0

* one subject had more than one disease

**other heart diseases such as congestive heart failure, valvular heart disease, coronary artery disease

As shown in Table 2, the majority of the subjects never had As shown in Table 2, the majority of the subjects never had acute myocardial infarction (86.7%). Average range of hospital stay before interviewed were 3.31 days. More than half of them had stayed for 1-3 days (61.9%). The largest group of subject (78.1%) had other prior underlying disease. The most found underlying disease was hypertension following with other heart diseases, hyperlipidemia, respectively. These subject always have two or several diseases altogether 39% of the subject used to smoke cigarette but had quitted before the interview. The most of the subjects (81.0%) never had family member who had heart disease. The most type of myocardial infarction found was ST Elevation myocardial infarction (STEMI) (54.3%). About 43.8 percent of the subjects, myocardial infarction were occur in inferior wall. Almost of the subjects (94.3%) had the positive Troponin-T or Troponin-I whilst a half of the subject had higher than normal level of CK-MB.

Section 3: The cognitive illness representation of the subject**Table 3** Number and percent of the subject classified by illness identity perception of the subject (N = 105)

Identity of the symptom*	Number	Percent
Sweating / Cool skin	93	88.6
Easily tired,	86	81.9
Shortness of breath	81	77.1
Fatigue	79	75.2
Palpitation	78	74.3
Tightness at the chest	76	72.4
Dullness at the chest	72	68.6
Pain radiate to jaws, shoulders, arms, or back	62	59.0
Near syncope	62	59.0
Epigastrium pain	55	52.4
Dizziness	52	49.5
Nausea / Vomitting	44	41.9
Heartburn	38	36.2

* could answer more than one symptom

According to Table 3, when considering the illness identity component, the most found symptom that the subject perceived was sweating (88.6%). And the subsequence symptoms were easily tired (81.9%) and shortness of breath (77.1%), respectively.

Table 4 Percent of the subject classified by each item of cognitive illness representation

Items	Strongly agree	agree	Uncertain	disagree	Strongly disagree
	(%)	(%)	(%)	(%)	(%)
Cause component					
This illness due to					
1. Hard work and lack of self care	49.5	18.1	2.9	16.2	13.3
2. Unexpected	46.7	26.7	5.7	14.3	6.7
3. Stress	44.8	19.0	4.8	14.3	17.1
4. Have high fat content food	42.9	21.9	6.7	7.6	21.0
5. Emotional and mental condition	41.9	18.1	5.7	13.3	21.0
6. Smoke cigarette	41.0	10.5	6.7	14.3	27.6
7. Hurried life style	37.1	19.0	9.5	20.0	14.3
8. Lack of exercise	32.4	21.9	7.6	22.9	15.2
9. Infection	17.1	15.2	21.9	16.2	29.5
10. Hereditary	7.6	5.7	15.2	30.5	41.0

Table 4 Percent of the subject classified by each item of cognitive illness representation
(continued)

Items	Strongly agree	agree	Uncertain	disagree	Strongly disagree
	(%)	(%)	(%)	(%)	(%)
Time-line component					
1. Your illness take short time to remedy but after that had to take good care of your health continuously	71.4	25.7	1.9	1.0	0.0
2. Your illness will last for a long time	28.6	21.0	20.0	21.0	9.5
3. Your illness will come and go	19.0	38.1	15.2	14.3	13.3
4. Your illness will last a short time	17.1	9.5	12.4	36.2	24.8
5. Your illness can not disappear although receiving treatment	16.2	15.2	20.0	28.6	20.0
Consequences component					
1. Your illness is a serious condition	69.5	19.0	1.9	9.5	0.0
2. Your illness burdened to your family	50.5	25.7	1.0	15.2	7.6
3. Your illness made you loss of physical strength	47.6	21.9	8.6	12.4	9.5
4. Your illness affected your income and well-being of your family	41.9	20.0	2.9	26.7	21.9

Table 4 Percent of the subject classified by each item of cognitive illness representation (continued)

Items	Strongly agree (%)	agree (%)	Uncertain (%)	disagree (%)	Strongly disagree (%)
Consequences component (continued)					
5. Your illness had a major consequences as my social life	35.2	30.5	10.5	15.2	8.6
6. Your illness strongly affected the way others see me	29.5	23.8	10.5	16.2	20.0
7. Your illness affected usual activity	28.6	29.5	6.7	23.8	11.4
8. Your illness has not had effect on your life	13.3	37.1	6.7	21.0	21.9
Control/cure component					
1. Your illness will improve by receiving treatment from health care provider	70.5	25.7	1.9	1.9	0.0
2. Your illness will improve by rest or sleep	27.6	35.2	1.9	11.4	23.8
3. Your illness will improve by taking medicine, i.e., Paracetamol, sublingual medicine	10.5	41.0	10.5	26.7	11.4
4. Recovery from your illness is largely depend on chance or fate	6.7	14.3	6.7	34.3	38.1
5. Your illness will be worse because of your treatment	1.9	10.5	4.8	27.6	55.2

According to Table 4, when considering each item of cognitive illness representation revealed that, in cause component, the majority of the subjects believed the cause of their illness was unexpected (73.4% from agree and strongly agree). The subsequent were from hard working or lacking care of themselves (67.6%) and from having high fat content food (64.8%). In time-line component, the most of subjects perceived this illness as acute and take short time to remedy but after that they had to continuously take good care of their health (97.1%). In consequences component, the most consequences stated by the subject was the perception seriousness of illness (88.5%) The subsequent were the sense of burden to their family (76.2%) and the sense of loss of physical strength (69.5%), respectively. And in control/cure component, the most of subjects perceived that the illness can be controlled/cured if receiving the treatment from health care professional (70.5%).

Table 5 Range of score, mean, standard deviation, skewness, and error of skewness of the component of cognitive illness representation

The component of cognitive illness representation	Range of interview form	Range of fact information	Mean	Standard deviation	Skewness	Error of skewness
Illness identity	0-13	1-13	8.36	2.74	-.32	.24
Time-line	5-25	10-25	16.78	2.92	.16	.24
Consequences	8-40	14-40	29.25	6.85	-.28	.24
Control/cure	5-25	8-22	15.02	3.32	-.10	.24

According to Table 5 the average score of the component of cognitive illness representation were found mostly at the moderate level as followed, illness identity component was 8.36 (S.D. = 2.74), time-line component was 16.78 (S.D. = 2.92), consequences component was 29.25 (S.D. = 6.85), and control/cure component was 15.02 (S.D. = 3.32), respectively.

Section 4: Time to seek treatment of the subject

Table 6 Mean, standard deviation, skewness, and error of skewness of decision time, transportation time, and total prehospital time of the subject

Time (minutes)	Min-Max	Mean	Median	Standard deviation	Skewness	Error of skewness
Decision time	5-420	95.24	60.00	88.29	1.46	.24
Transportation time	5-1666	216.51	110.00	321.17	3.03	.24
Total pre-hospital time	10-1966	309.47	228.00	342.03	2.84	.24

According to Table 6, the distribution of time (minute) in decision time, transportation time, and total pre-hospital time were right skewness (skewness = 0 is normal distribution) which were 60.00, 110.00, and 228.00 minutes, respectively.

Section 5: Relationships between age, gender and the components of cognitive illness representation and the decision to seek treatment

Table 7 Pearson's product Moment Correlation Coefficient of the study variables

Variables	1	2	3	4	5	6	7
1. Age	1.000						
2. Gender	-.010	1.000					
3. Illness identity ¹	.087	.020	1.000				
4. Time-line	-.113	.127	.142	1.000			
5. Consequences	.180	-.124	.338**	.187	1.000		
6. Control/cure	-.238*	.082	-.136	-.087	-.203*	1.000	
7. Decision time ²	.120	.018	.066	.145	.224*	-.152	1.000

*p<.05, **p<.01, ¹ number of symptom,

² logarithmic transformation form according to the skewness distribution of decision time

According to Table 7, a significant positive relationship was found between consequences component of cognitive illness representation and decision time to seek for treatment ($r = .224$, $p < .05$)

Insignificant negative relationship was found between control/cure component of cognitive illness representation and decision time to seek for treatment ($r = -.152$, $p > .05$)

Age, gender, and the component of cognitive illness representation comprising illness identity and time-line had no relationship with decision to seek for treatment of subject ($p > .05$)

Section 6: Predicting ability of independent variables on decision to seek treatment of acute myocardial infarction patients

Table 8 Summary hierarchical multiple regression with decision time to seek treatment (log-transformed)

Step	Variables	b	β	R	R^2	R^2 change	F change
1	Consequences component	1.388 .01388	.224	.224	.050	.000	5.451*
2	1. Consequences component	1.248 .01248	.202	.249	.062	.012	3.384*
	2. Control/cure component	-1.43 -.0143					
			-.112				

Constant (a) = 1.642, Standard Error = .286, * $p < .05$

As shown in Table 8, when using hierarchical multiple regression method for analyze predicting ability of independent variables on decision to seek treatment of the subject revealed that consequences component and control/cure component of cognitive illness representation had co-predictability toward decision to seek for treatment for 6.2% ($R^2 = .062$, $p < .05$). Consequences component was the first variable added to the hierarchical regression equation, yielded a predictive coefficient of .050

($R^2 = .050$, $p < .05$). Control/cure component was added in the following step which can increase predictability for 1.2% ($R^2 \text{ change} = .012$) to a predictive coefficient of .062 ($R^2 = .062$).



CHAPTER V

DISCUSSION

This chapter will discuss the influences of age, gender, and illness perception factors upon the decision to seek treatment for acute myocardial infarction patients.

1. Patients decision on when to seek treatment for their acute myocardial infarction (AMI)

The decision when to seek treatment was evaluated by looking at the duration of time (in minutes) needed to make decision on when to look for treatment with the result that the subject group needed 60 minutes (see Table 6) which was consistent with the median duration utilized in previous researches which found that patients needed between 20-90 minutes. (Morgan, 2005; Walsh, et al., 2004; Hirvonen, Halinen, Kala, & Olkinuora, 1998). This median time indicated the appropriate decision making to seek treatment of the research subject group. Considering the characteristics of this research subject group, most of the subjects were elderly, had primary school education, and lack of an adequate knowledge or experience about their disease in contrast to the studies conducted abroad where the subject usually had a higher education and more knowledge and experience about their disease. Furthermore, the subject accessibility to health care services was largely different to the one they would have in Thailand, the abroad subjects had usually a much easier and faster access to health care in comparison. In addition, the maximum time elapsed between the onsets of symptoms and to receive a pharmacological effective thrombolytic agent was 60 minutes (The thrombolytic agent only has a significant pharmacological effect within the first 12 hours after the onset of symptoms).

However, the duration of time past to seek treatment is only part of the total delay time, it further comprises of transportation time, time between arrivals at the hospital and receiving appropriate treatment. Each of every part is interrelated with the time lapses to actually receive effective treatment. In previous studies the estimated time needed to find proper treatment may have included the duration of time past

when to make the decision to seek treatment and transport but excluded the waiting time between arriving at the hospital and to receive appropriate treatment which resulted in an estimated median delayed time to seek treatment of 120 to 240 minutes (2 to 4 hours) (Dracup & Moser, 1991; GUSTO Investigator, 1993; Goldberg, Gurwitz, & Gore, 1999).

Even though this study did not take into account the transportation time to hospital and the time from onset to arriving the hospital as research variables, these time data was collected and shown in the result section only as basic data for a future research. This study found that the elapsed median transport time was 110 minutes (see Table 6) and the median total pre-hospital delay time from the onset of the symptoms until arriving at the hospital was 228 minutes (see Table 6).

The median of 110 minutes transportation time to hospital was rather long, considering the settings of this study were tertiary hospitals, capable of providing thrombolytic treatment to AMI patients and were situated in the urban areas of the respective province, but most of subjects resided in rural area or adjoining districts which took a considerable amount of transporting time. Once the subject with an onset were diagnosed with having or possibly having AMI, they were referred to an appropriate hospital via a patient referral network, which might not only have taken many steps prior to the eventual arrival at the target hospital but also resulted in a even longer transporting time. This reflects the difficulty and complexity of providing a good rural or provincial health care service. In addition, the primary-local health care personnel's lack of knowledge and inexperience with diagnosing AMI, was and still is a major reason for an additional time delay in finding proper treatment, it can drastically reduce the treatment effectiveness or failure to receive the effective treatment just in time with a premature death as inevitable result. However, these local health care service problems were different could be resolved by investigating and tackling these problems which may result in being able to provide the best possible treatment for acute myocardial infarction patients.

Considering the level of effectiveness is depending very much on the total elapsed time between onset and receiving a thrombolytic agent, the 60 minutes median decision time to seek treatment plus the median of 110 minutes transportation time to hospitalization for receiving proper treatment, it was still very well below the above

mentioned 12 hours with the result that treating the patient with an thrombolytic agent was still effective provided and increased the chance of survival substantively. As a result, the effective level of thrombolytic treatment depends on the total time from onset of symptoms to receiving the thrombolytic agent treatments.

However, this study concentrated only the decision time to seek treatment since the decision making is a patient-controllable process whilst transportation time depends on many uncontrollable factors, as availability of vehicles etc. A decision to seek treatment, despite being under the patient's control, is very much depending on all sorts of circumstances, but age, gender and components of illness representation which may have influenced the decision to seek treatment were considered in this study.

2. The relationship between age, gender and components of cognitive illness representation/perception factors against the decision when to seek treatment for acute myocardial infarction patient.

Age:

According to the results of this study, age had no relationship with the decision when to seek treatment ($r = .120$, $p > .05$) (see Table 7), since most of the subject's age, 53.3% were in 55 to 74 age group which was too narrow as the difference due to age cannot be identified. This result corresponded with Goldberg et al., Johansson et al., and Quinn research who stated that age had no relationship with the decision when to seek treatment (Goldberg, et al., 1992; Johansson, et al., 2004; Quinn, 2005).

In Thailand, Ormanee Changchaywong found that age had an insignificant relationship with the elapsed time before receiving treatment had an insignificant level of .05 arguing that most of subjects were middle and elderly adults, resulting in a too narrow age distribution (Changchaywong, 2002). However, this result was in contradiction with Dracup & Moser who found that the older subjects took more time to make a decision seeking treatment than the younger subjects, rationalized that older people had concurrent diseases which made the identification of symptoms more complex (Dracup & Moser, 1997). Meischke also found the contrary result with this study that older people took longer time in every decision process as well as for the decision to seek treatment. They might have perceived the AMI symptoms as a rather

slightly different symptom, originating from some other sources than the heart (Meischke, 1993).

Gender:

In this study, gender had no relationship with when the decision was made to seek treatment ($r = .018$, $p > .05$) (see Table 7), which (see Table 1) may count for the majority of male subject (63.8%) as well as with the subject characteristics as the two genders similar ages, educational levels or unemployment and no occupation. When this subject perceived the onset of symptoms, they usually consulted family members first which caused more loss of time than consulting with friends or coworkers. The of symptom data's of both subject genders were approximately the same and the onset of symptoms were both acute myocardial infarction symptoms and other relevant symptom which may occur in both genders. This result was consistent with Dracup & Moser, Grace, and Quinn who found that gender had no relationship with the decision to seek treatment (Dracup & Moser, 1997; Grace, et al., 2003; Quinn, 2005).

Dracup & Moser found that the decision to seek treatment of male and female subject were indifferent which may an inherently effect on the research inclusion criteria for up-to 6 hours pre-hospital time in their study. In another study which included an over 6 hours pre-hospital time subject in their study, larger numbers of female patients were found to take more than 6 hours. Grace, found no difference in the decision time to seek treatment between males and females. This result was also corresponding with Thailand's own Ormanee Changchaywong's study, who found that the gender had an insignificant relationship with the time delay to seek treatment for AMI patients. (Significance level .05 due to narrow distribution of data). 66% of the subjects were male and 34% were female. The author stated that the health problems of both male and female subjects were related to obesity and or diabetes mellitus which led to a higher risk of having an influence on the cardiovascular disease perception of symptoms, equal to male and females.

However, this result was in contradiction to Meischke & Horne's study who found that females took a longer decision time than males (Meischke, 1993; Horne, et al., 2000). Meischke rationalized that a heart attack occurred more often in males than in females, which generated the beliefs that a heart attack was a male dominated disease, thus female hesitated to believe that the chest pain perceived was a sign and

symptoms of heart attack. When symptoms of AMI occurred, males tend to consult with their colleagues which accelerated the decision to seek treatment, whilst females tended more to consult family members which may have contributed to a delayed decision to seek treatment (Hendel, 1990; Dempsey, et al., 1995).

Illness identity component of cognitive illness representation

In this study, (see Table 5) the average score for the illness identity components which had a moderate 8.36 (S.D. = 2.74), implying that when acute myocardial infarction occurred, 7 to 11 from total of 13 symptoms were perceived by the subjects (62.8%). The interpretation of this component of illness representation was: If the subject perceived numbers of symptoms, most of them related to or close to a acute myocardial infarction symptom. So more the subjects recognized the symptoms, so more they realized that they were getting a heart disease and in need of treatment.

The number of symptoms however, (see Table 7), had no relationship with the decision to seek treatment ($r = .066$, $p > .05$). This may have reflected from the interview statements taken from subject, that they were convinced by the severity of symptoms rather than numbers of symptoms in order to make decision to seek treatment. This result was consistent with Horne and Walsh who found that the numbers of symptoms were not correlated with the decision to seek treatment. However, if the symptoms were more likely to convince the patients to have an acute myocardial infarction or heart disease symptoms, it could accelerate the decision to seek treatment (Horne, et al., 2000; Walsh, et al., 2004).

The interview data further revealed that the number of symptoms was not correlated with the decision to seek treatment but the severity of symptoms accelerated the decision to seek treatment, like the patient perceived the occurrence as a severe symptom regardless of a number of symptoms, he or she would hurry to seek treatment. In addition, most of the subjects developed symptoms of acute myocardial infarction for the first time. The minority of them (16.2%), reported to have a history of heart diseases in the family, which may suggested the patients lack of adequate knowledge to assess specific signs and symptoms of AMI accurate and appropriately (see Table 2). Although patients experienced different numbers of symptoms, the three most frequent symptoms, i.e., sweating/cool skin, easily tired, and shortness of breath,

were not AMI specific symptoms. These symptoms could have occurred in conjunction with chest pain. From past studies we know that Morgan (2005) stated a larger numbers of less specific symptom perception rather than the number of acute myocardial infarction-specific symptoms. This was the major cause for delay in making a decision to seek treatment since the symptoms as they perceived did not match with their expected symptoms of acute myocardial infarction which they had experienced or received information from family, society, or mass media. Most common symptoms reported were sweating/cool skin, easily tired, and shortness of breath which no specifics to an acute myocardial infarction symptom, which may indicate that the illness identity representation had no relationship with the decision to seek treatment.

Cause component of cognitive illness representation

The most of subjects (73.4%) used for this study perceived that the cause of illness was unexpected (see Table 4). This may have arisen by the sudden nature of their symptoms. Many said that the symptoms occurred suddenly and unexpected during normal or relaxing activities such as sitting or lying in bed without any work or heavy load, carrying something, being stressed or having any other illnesses. As a result, the most of subjects held the occurrence of acute myocardial infarction as unexpected. Subsequently, most identified the cause of AMI were from hard work and ignorance of self care (67.6%), from consuming high fat contents food (64.8%), from stress (63.8%) and from emotional and mental condition (60.0%) respectively (see Table 4).

According to the interview with the subject who identified hard working and lack of self care as the cause of their illness, they gave a higher importance to lack of self care than of hard working. Since they did not carry out hard work anymore, the majority of late adult and elderly were likely to justify this result. The perception on lack of self care included lack of exercise, smoking and inappropriate diet.

The subject perceived having high fat content food, stress, and emotion & mind condition as the cause of acute myocardial infarction ranking as 3rd, 4th, and 5th reasons (64.8%, 63.8%, 60.0%) respectively, indicated the lack of knowledge about the risk factors which were the cause for their acute myocardial infarction. Even though the subject did not exactly specify the above risks as causes of acute

myocardial infarction, rather mentioned the above risks as possible or contributing cause for their illness during the interview. Stress, emotion and mental conditions were closely related therefore the subject specified both of them equally. The least identified cause of illness was genetic transfer (13.3%, see Table 4), which may have been due to no history of heart disease in ancestry and family members (81.0%; see Table 2) or the lack of knowledge and understanding of the risk factors and cause for acute myocardial infarction.

According to a previous study of cognitive illness representation, in the cause component, if the subject perceived that the symptoms occurred were caused by heart disease they would make the decision to seek treatment quicker than the subject who believed that the symptoms were caused by gastrointestinal or muscular diseases (Quinn, 2005). However, this study did not intend to directly assess whether or not the subject perceived that the illness occurred was caused by a heart disease, rather intended to assess a holistic view about what kind of cause were perceived by the subject. These causes were comprised of specific acute myocardial infarction causes, i.e., having high fat content food, stress, lack of exercise, and the cause not correlate to acute myocardial infarction such as unexpected events, and hard work. The result can be summarized by, most of subject perceived the cause of their illness as an unexpected event which could not be controlled.

Time-line component of cognitive illness representation

The subject in this study had an average time-line of cognitive illness representation of 16.78 (S.D. = 2.92) (see Table 5) which can be seen as a rather moderate level. The result (see Table 7) further indicated that the time-line had no relationship with the decision to seek treatment ($r = .145$, $p > .05$) which implied, the decision when to seek treatment was not correlate to time-line of the illness representation as chronic or acute. This finding was consistent with Quinn and Walsh et al. (Quinn, 2005; Walsh, et al., 2004).

Considering the results by item, most of subjects perceived the illness without exact judgment whether it was chronic or acute, they mixed it up instead. This became evidenced from the information (see Table 4) that most of subjects perceived this illness as acute and take just a short time to remedy, but after that they had to continuously take good care of their health ever after (97.1%) The self care was

understood as taking continuous medication to control their symptom, adjust life pattern appropriate to the disease, and avoid the risk factors which may cause a recurrence of disease, since their acute myocardial infarction onset was rather sudden but ongoing and unsteady. According to the interview information received, the severity of symptoms influenced the decision to seek treatment, more though than the number of symptoms or time-line perception of the disease, whether it was acute or chronic. This finding did not correspond with the commonly stated cognitive illness representation concept, that the illness perception as chronic caused more delay in the decision to seek treatment than the illness perception as acute.

Consequences component of cognitive illness representation

The average score in the consequences component was 29.25 (S.D. = 6.85) which was a moderate level (see Table 5). However when the result of consequences component were seen by item, the most understood consequences stated by the subject was the perception the seriousness of their illness (88.5%) which may have been due to the sudden and severe occurrence of symptoms as the most of subjects never experienced before (see Table 4). During interview, many subject expressed their perception of severity as “I thought I could not have survived” or “I thought I would have died”. The second most consequence stated by patients was the sense of burden to their family (76.2%), the third (see Table 4) was the loss of physical strength (69.5%). The least identified consequence was no consequences at all for their future life (50.4%; see Table 4). According to the results, the most of subject perceived the consequences of illness because the physical and psychological dimension to themselves and to their family.

The consequences component (see Table 7) had a positive relationship with the decision time to seek treatment ($r = .244$, $p < .05$), so more patients literally perceived the consequences of illness, so longer the decision time they would have taken to seek treatment. This finding was concurrent to the findings of Dracup & Moser’s study who found that the fear of consequences caused more delay to seek treatment (Dracup & Moser, 1997). However, this finding was contradictory to the concept of cognitive illness representation which stated that perceiving severe consequences of illness would have accelerated the decision to seek treatment. Moreover, this finding was also contradictory to Walsh who found that perceiving the consequences of illness had a

negative relationship with the decision time to seek treatment ($r = -.50, p < .01$). It implied that so more consequences perception of the patient, so shorter the decision time to seek treatment were used, since the consequences perception created fear which motivated a quicker decision making (Walsh, et al., 2004).

This finding was explanation due to the interference of other related factors like most subject were elderly which responded to the occurred events as well as being slower than for the younger people (Meischke, 1993). According to interview information received, most of subjects were elderly who stayed home with their spouses and or with their children, whilst their younger family members went to work. When they perceived the onset, despite of perceiving the severe consequences, they tolerated it since they had nobody to send them to hospital. Only if they could not have tolerated it anymore, only then they found someone to call one of their younger family members to take them to a hospital. If the onset of symptoms occurred during the night, they also tolerated it to avoid disturbing their younger family member or neighbors by asking them to send them to a hospital. Besides, the kind of transportation also had a considerable effect on their decision time to seek treatment, both, the vehicle and the distance to the hospital. Most subject resided in rural rather than urban areas, therefore the difficulty to find an appropriate vehicle and the very long distance to a hospital became an interference factor to delay the decision to seek treatment, especially if it were milder symptoms at the onset of pain, even though the subject perceived the consequences on a rather high level.

The control/cure components of the cognitive illness representation

The average score of control/cure component (see Table 5) in this study was 15.02 (S.D. = 3.32) which was again a rather moderate level. In addition, even though statistically insignificant ($r = -.152, p > .05$), the control/cure component was found to have a rather negative then positive relationship with the decision to seek treatment (see Table 7). The rationalization of this finding was due to the sudden and severe onset of symptoms causing fear to the subjects and they thus perceived the illness as uncontrollable. Moreover, they may have perceived that the illness could be cured or not, depending on Karma or destiny, which involved receiving a just in time treatment or were taken of care of by a highly competent physician. Many subjects stated that “If I have a highly competent physician, I would be well cured”. The other group of

subject who perceived the acute myocardial infarction as control/curable by practicing various control/cure methods such as rest, sleep, or medication depending on their experiences, including seeking treatment from a health care professional. However, the most reliable method perceived to control/cure the symptoms of acute myocardial infarction was seeking treatment from a health care professional rather than practicing a kind of self care.

The above findings were analogous to Quinn and Walsh who found that the control/curability perception of illness had no relationship with the decision when to seek treatment (Quinn, 2005; Walsh, et al., 2004).

3. Factors affecting the decision to seek treatment for acute myocardial infarction patients

According to hierarchical multiple regressions to determine the predictability of personal factors like age, gender and cognitive illness representation factors towards the decision time to seek treatment for acute myocardial infarction were important. The result revealed that the consequence aspect and the control/curability aspect of the cognitive illness representation had a significant co-predictability of 6.2% ($p < .05$) towards the decision to seek treatment. (see Table 8). The consequence aspect of the cognitive illness representation had a significantly predictability of 5.0% ($p < .05$) towards the decision to seek treatment (see Table 8). As for the age, gender, illness identity and time-line aspect of the cognitive illness representation, (see Table 8), it had no predictability towards the decision to seek treatment ($p > .05$), presumably due to no relationship between these factors and the decision to seek treatment. The reason that the control/curability aspect of the cognitive illness representation had a co-predictability towards the decision to seek treatment may have been based on a negative relationship between this aspect and the consequences aspect of cognitive illness representation (see Table 7). It had a statistical significance of .05 ($r = -.203$, $p < .05$).

The predictability of the cognitive illness representation towards the decision to seek treatment of acute myocardial infarction patients had been studied as a one overall components unit as well as each in each of the five components separately. Quinn and Walsh found that the overall illness representation had a certain

predictability towards the decision to seek treatment for acute myocardial infarction patients. However, when studied separately, the result of this study was consistent with Walsh who found that the consequence aspect of the cognitive illness representation were the only cognitive illness representation factor which had a predictability towards the decision to seek treatment, which was presumably due to the fear factor which activates the response on the symptoms onset (Walsh, et al., 2004).

Nevertheless, this study was not consistent with Quinn's study, who found that the cause representation aspect of the cognitive illness representation had a predictability towards the decision to seek treatment (Quinn, 2005) and also yielded different result to Moser who found that the control/curability and consequence aspect of the cognitive illness representation had no predictability towards the decision when to seek treatment (Moser, 2005).

However, there was still the remaining 93.8% predictability of when to decide to seek treatment which could not have been explained in this study. The predictability on the decision when to seek treatment did not only depend on the consequences of illness and control/cure representation, but also on many other factors such as educational level, severity of symptoms, and illness coping which were not taken into account in this study. After all, these other factors are expected to have a high level of predictability effect on the decision to seek treatment which would be very interesting to investigate in a further study.

CHAPTER VI

CONCLUSION

This descriptive research aimed on studying the influencing factors in relation to AMI sufferer's time lapsed, used until they decided to seek appropriated treatment for their acute myocardial infarction. Factors studied were age, gender, components of cognitive illness representation as there are the illness identity, time-line, consequences, and control/cure. The subjects of this study were acute myocardial infarction patients who were admitted between May and September 2005 to one of the medical departments of the Buddhachinaraj, Uttaradit or the Sawanpracharak Hospital, in the Phitsanulok, Uttaradit and Nakornsawan Province, respectively. The total number of interviewed subjects was 105.

The research data collection instrument was a two part interview form. Part 1 covered the general, clinical status and health behavior data's and part 2 of the instrument was used to collect the cognitive illness representation of acute myocardial infarction patients. The instrument was later send to a committee of three experts for validation. After validation, test interviews with 20 AMI patients were taken to determine the reliability of the instrument, using Cronbach's Alpha Coefficient statistics. The reliability test of part 2 instrument (component of cognitive illness representation), resulted as follows: Illness identity components reliability = .70; time-line component reliability = .78; consequences component reliability = .83; control/cure component reliability = .58, and cause component reliability = .72. The researcher collected all data's personally. The demographic data were analyzed by frequency distribution, percentage and arithmetic mean. Patient's decision time to seek treatment were displayed in minutes and analyzed by arithmetic mean, median, and standard deviation. The relationship between age, gender, & the components of cognitive illness representation against the decision to seek treatment were analyzed by using Pearson's correlation coefficient statistics. Predictability of age, gender and the components of cognitive illness representation towards the decision to seek treatment were analyzed by using hierarchical multiple regression.

Research results

1. 63.8% of the 105 subjects were males, 53.3% of the subjects were between 55 and 74 years old, 82.9% were married, 71.4% had a primary school education, and 32.4% had no occupation. 53.3% could not state a monthly family income, 56.2% of companions present at symptoms onset were their spouse. 41% of person who provided patients transport to hospital were their own children. 78.1% of the subjects had the past illness history. The most found underlying disease was hypertension followed by other heart diseases and hyperlipidemia. 39% of the subjects used to smoke but quitted before the interview. The most of subjects (81%), never had a family member with a heart disease. The most found type of myocardial infarction was ST Elevation myocardial infarction (STEMI) (54.3%). The most found area of myocardial infarction was inferior wall myocardial infarction (43.8%).

2. The arithmetic mean of the decision time to seek treatment was 95.24 minutes (S.D. = 88.29) with a median of 60.00 minutes (see Table 6).

3. Age, gender and the component of cognitive illness representation comprising illness identity and time-line had no relationship with the decision of when to seek treatment ($r = .120, .018, .066, .145$, respectively, $p > .05$; see Table 7).

4. The consequences component of cognitive illness representation had a positive relationship with the decision to seek treatment with a statistical significant ($r = .244, p < .05$; see Table 7).

5. The control/cure component of the cognitive illness representation had a negative relationship with the decision to seek treatment with a statistical insignificant ($r = -.152, p > .05$; see Table 7).

6. Most of the subjects perceived the cause of this illness as an unexpected event (73.4%), followed by hard work & lack of self care (67.6%), and eating high fat content food of 64.8% (see Table 4).

7. The consequences and control/cure components of the cognitive illness representation had a co-predictability towards the decision to seek treatment value of 6.2% and a statistical significant value of $p < .05$ (see Table 8) The consequences components of the cognitive illness representation alone had predictability of 5% and a statistical significant value of $p < .05$ (see Table 8).

Research implementation and recommendation

Implementations for nursing practice

The results of this study can be useful basic data for health care teams responsible for acute myocardial infarction patients by developing informational interventions to promote an appropriate timely decision to seek treatment for acute myocardial infarction patients in order to achieve the best possible effectiveness of treatment.

To promote an appropriate illness representation should be conducted as follows:

1. Since it had the influence on the decision of when to seek treatment, promote correct knowledge and understanding concerning threat and adverse consequences after an acute myocardial infarction, the benefit and importance of a quick as possible decision to seek treatment, including the adverse consequences of a delayed decision to seek treatment in order to motivate the patient to accelerate their decision to seek treatment to achieve highest possible treatment effectiveness.

2. Providing correct knowledge about cause, especially avoidable risk factors for acute myocardial infarction to the patients and their family members, as well as other risk groups such as diabetes mellitus patients, hypertension patients, hyperlipidemia patients, and the community dwelling people, by personally teaching soon to be discharged patients at their hospital bed side, group teaching, publish teaching documents, developing simple easy to understand and plain Thai acute myocardial infarction risk assessment forms. The promotion should highlight on the patient, family and risk group participation in self care and avoiding risk factors as well as teaching people to be able to self-assess their acute myocardial infarction risk which can result in a more appropriate decision to seek treatment.

Implementations for further research

This research result could also be a basic data and guideline for the research of other factors influencing the decision when to seek treatment for an acute myocardial infarction or other related illnesses. The result can become an important basic data for a qualitative research of an illness representation and another part of self regulation theory (Leventhal, et al., 1984) and be detailed as follows:

1. This study can be a guideline for other interesting demographic and clinical factor studies, like studies on educational level, companion during the onset of symptoms, past illness history prior to seeking treatment, knowledge about illness, and severity of symptom onset, giving whether and how they have a relationship with the decision to seek treatment. This further research could also be beneficial to the development of an appropriate and correct educational guideline for patients in various group.

2. To be a guideline for study of other parts of Leventhal's self regulation theory (1984) like the emotional response to illness, illness coping and appraisal of coping effectiveness, providing the information on if and how they may have a relationship with the decision to seek treatment for acute myocardial infarction patients. The research may be done in part or in whole of the self regulation theory which could enhance the understanding of the decision to seek treatment procedures and mechanisms, including the interrelationship between each procedure and mechanism.

3. To be the basic data for further research on illness representation and factors affecting the decision to seek treatment, such as how male and females respond differently to an acute myocardial infarction onset, or are there any other how and why different reason or factors between a quick or delayed decision to seek treatment for an acute myocardial infarction patient. It could give a clear insight to data's and be used to solve the decision delaying problem more effectively.

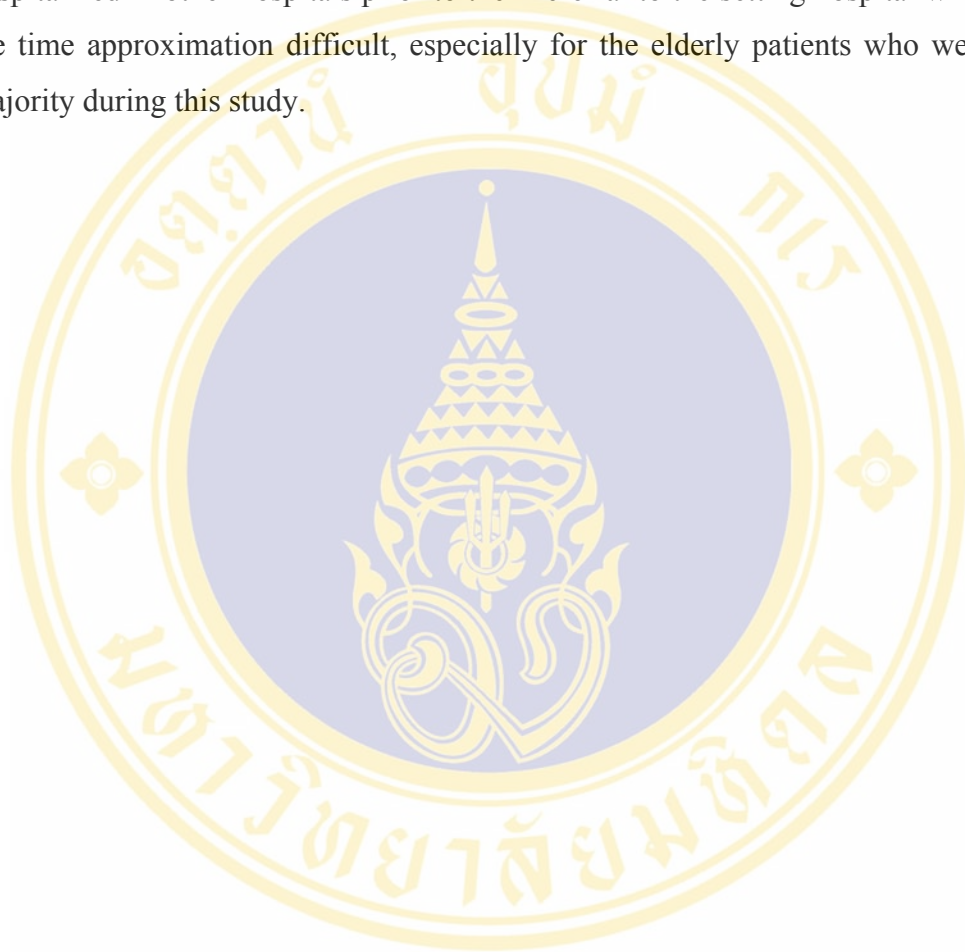
Recommendation for further research

1. In future researches, data collection time and sample size should be increased in order to provide a more uniformly distribution of subjects in each variable which would make the research result more reliable and therefore a good representation of the population.

2. The result of this study evidenced that the decision of the subjects was depend on the characteristic of the resident, i.e., lived in the urban, the rural, or the capital city. Therefore the future research should be conduct at other setting, especially the setting in the capital city where have terrible traffic. The study covering many groups of patients would present clear knowledge about the decision making to seek treatment in various population.

Limitations

The interview with the subjects request them to recall back to their onset, whilst some subjects had already been hospitalized for many days before the interview and just recovered to be able to have the interview done, some of the subjects were hospitalized in other hospitals prior to their referral to the setting hospital which made the time approximation difficult, especially for the elderly patients who were in the majority during this study.



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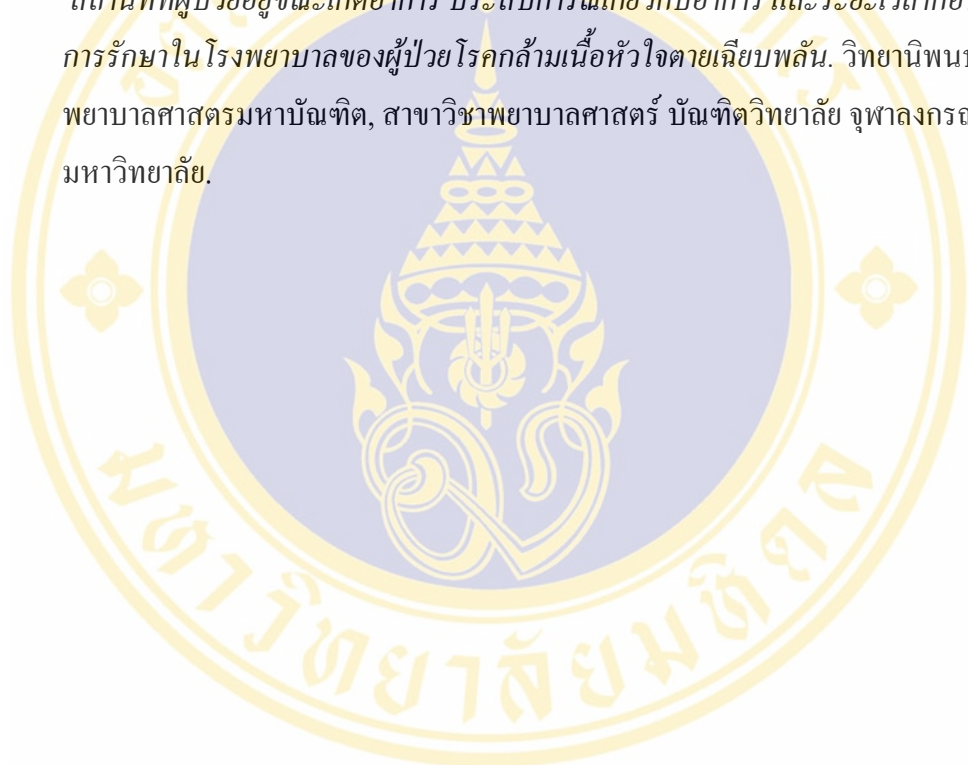
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APPENDIX A

LIST OF EXPERTS

The validity of research instruments was assessed by three consulting experts:

Dr. Chatkanok Dumavibhat

Her Majesty's Cardiac Center, Siriraj Hospital, Mahidol University

Lect. Dr. Kesarin Utriyaprasit

Department of Medical Nursing, Faculty of Nursing, Mahidol University

Miss. Yeesoon Khoypanich

Coronary Care Unit, Siriraj Hospital, Mahidol University

APPENDIX B

MORE RESULTS

ตารางที่ 9 จำนวนและร้อยละของกลุ่มตัวอย่าง จำแนกตามการรับรู้ภาวะความเจ็บป่วยด้านลักษณะของอาการที่เกิดขึ้น

ลักษณะอาการที่เกิดขึ้น	เกิด		ไม่เกิด	
	จำนวน	ร้อยละ	จำนวน	ร้อยละ
เจ็บตื้อๆ บริเวณหน้าอก	72	68.6	33	31.4
ใจสั่น	78	74.3	27	25.7
หายใจไม่สะดวก/ขัด	81	77.1	24	22.9
เหงื่อออก, ตัวเย็น	93	88.6	12	11.4
แน่นอึดอัดบริเวณหน้าอกคล้ายถูกเชือกรัด	76	72.4	29	27.6
คลื่นไส้ อาเจียน	44	41.9	61	58.1
จุกแน่นใต้ลิ้นปี่	55	52.4	50	47.6
ปวดคราม, ไหล่, แขน, หรือหลัง	62	59.0	43	41.0
เหนื่อยล้า	79	75.2	26	24.8
หน้ามืดตาลาย	52	49.5	53	50.5
เหนื่อยง่าย	86	81.9	19	18.1
คล้ายจะเป็นลม	62	59.0	43	41.0
สับสนขมวดอก	38	36.2	67	63.8

ตารางที่ 10 จำนวนและร้อยละของกลุ่มตัวอย่าง จำแนกตามการรับรู้ภาวะความเจ็บป่วยรายข้อ

ข้อความ	เห็นด้วย อย่างยิ่ง	เห็นด้วย	ไม่แน่ใจ	ไม่เห็น ด้วย	ไม่เห็น ด้วย อย่างยิ่ง
	n(%)	n(%)	n(%)	n(%)	n(%)
ด้านสาเหตุของการเกิดความเจ็บป่วย					
1. ความเจ็บป่วยของท่านครั้งนี้เกิดจากการติดเชื้อโรค	18(17.1)	16(15.2)	23(21.9)	17(16.2)	31(29.5)
2. การชอบรับประทานอาหารประเภทที่มีไขมันสูงเป็นสาเหตุความเจ็บป่วยครั้งนี้ของท่าน	45(42.9)	23(21.9)	7(6.7)	8(7.6)	22(21.0)
3. ความเจ็บป่วยของท่านครั้งนี้ถูกถ่ายทอดมาทางกรรมพันธุ์	8(7.6)	6(5.7)	16(15.2)	32(30.5)	43(41.0)
4. ความเครียดเป็นปัจจัยสำคัญอย่างหนึ่งในการเป็นสาเหตุความเจ็บป่วยครั้งนี้ของท่าน	47(44.8)	20(19.0)	5(4.8)	15(14.3)	18(17.1)
5. ความรีบเร่งในชีวิตประจำวันเป็นสาเหตุความเจ็บป่วยครั้งนี้ของท่าน	39(37.1)	20(19.0)	10(9.5)	21(20.0)	15(14.3)
6. ความเจ็บป่วยครั้งนี้ของท่านเกิดจากการทำงานหนักและไม่เอาใจใส่ดูแลตนเอง	52(49.5)	19(18.1)	3(2.9)	17(16.2)	14(13.3)
7. การสูบบุหรี่เป็นสาเหตุความเจ็บป่วยครั้งนี้ของท่าน	43(41.0)	11(10.5)	7(6.7)	15(14.3)	29(27.6)
8. การขาดการออกกำลังกายเป็นสาเหตุความเจ็บป่วยครั้งนี้ของท่าน	34(32.4)	23(21.9)	8(7.6)	24(22.9)	16(15.2)
9. มันเป็นเหตุสุดวิสัยที่ท่านเจ็บป่วยด้วยโรคนี้	49(46.7)	28(26.7)	6(5.7)	15(14.3)	7(6.7)
10. สภาวะทางจิตใจและอารมณ์ เช่น มีอารมณ์ร้อน โกรธ, โมโห หรือหงุดหงิดง่าย เป็นสาเหตุหนึ่งของความเจ็บป่วยครั้งนี้ของท่าน	44(41.9)	19(18.1)	6(5.7)	14(13.3)	22(21.0)

ตารางที่ 10 จำนวนและร้อยละของกลุ่มตัวอย่าง จำแนกตามการรับรู้ภาวะความเจ็บป่วยรายข้อ (ต่อ)

ข้อความ	เห็นด้วย อย่างยิ่ง	เห็นด้วย	ไม่แน่ใจ	ไม่เห็น ด้วย	ไม่เห็น ด้วย อย่างยิ่ง
	n(%)	n(%)	n(%)	n(%)	n(%)
ด้านระยะเวลาที่คาดว่าความเจ็บป่วยจะดำเนินไป					
1. ความเจ็บป่วยครั้งนี้ของท่านจะหายในไม่ช้า	18(17.1)	10(9.5)	13(12.4)	38(36.2)	26(24.8)
2. ความเจ็บป่วยครั้งนี้ของท่านจะเป็นๆ หายๆ	20(19.0)	40(38.1)	16(15.2)	15(14.3)	14(13.3)
3. ความเจ็บป่วยครั้งนี้ของท่านต้องใช้ระยะเวลานานในการรักษาจนกว่าจะหาย	30(28.6)	22(21.0)	21(20.0)	22(21.0)	10(9.5)
4. ความเจ็บป่วยครั้งนี้ของท่านไม่สามารถรักษาให้หายขาดได้	17(16.2)	16(15.2)	21(20.0)	30(28.6)	21(20.0)
5. ความเจ็บป่วยครั้งนี้ของท่านใช้ระยะเวลาในการรักษาไม่นาน แต่ต้องดูแลตัวเองให้ดีขึ้นต่อไปอย่างต่อเนื่อง	75(71.4)	27(25.7)	2(1.9)	1(1.0)	0(0.0)
ด้านผลที่คาดว่าจะเกิดตามมาภายหลังจากความเจ็บป่วย					
1. ความเจ็บป่วยครั้งนี้ทำให้ท่านไม่สามารถกลับไปทำงานได้ตามปกติ	30(28.6)	31(29.5)	7(6.7)	25(23.8)	12(11.4)
2. ความเจ็บป่วยครั้งนี้ทำให้ท่านสูญเสียความแข็งแรงของร่างกาย	50(47.6)	23(21.9)	9(8.6)	13(12.4)	10(9.5)
3. ความเจ็บป่วยครั้งนี้ส่งผลกระทบต่อการค้ารงชีวิตในสังคมของท่าน	37(35.2)	32(30.5)	11(10.5)	16(15.2)	9(8.6)
4. ความเจ็บป่วยครั้งนี้ไม่ได้ทำให้การดำเนินชีวิตของท่านเปลี่ยนแปลงไปจากเดิม	14(13.3)	39(37.1)	7(6.7)	22(21.0)	23(21.9)

ตารางที่ 10 จำนวนและร้อยละของกลุ่มตัวอย่าง จำแนกตามการรับรู้ภาวะความเจ็บป่วยรายข้อ (ต่อ)

ข้อความ	เห็นด้วย อย่างยิ่ง	เห็นด้วย	ไม่แน่ใจ	ไม่เห็น ด้วย	ไม่เห็น ด้วย อย่างยิ่ง
	n(%)	n(%)	n(%)	n(%)	n(%)
ด้านผลที่คาดว่าจะเกิดตามมาภายหลังจาก					
ความเจ็บป่วย (ต่อ)					
5. ความเจ็บป่วยครั้งนี้ทำให้ผู้อื่นมองว่าท่านเป็นคนอ่อนแอ	31(29.5)	25(23.8)	11(10.5)	17(16.2)	21(20.0)
6. ความเจ็บป่วยครั้งนี้ของท่านส่งผลกระทบต่อรายได้และความเป็นอยู่ของครอบครัว	44(41.9)	21(20.0)	3(2.9)	28(26.7)	9(8.6)
7. ความเจ็บป่วยครั้งนี้ทำให้ท่านรู้สึกที่ต้องเป็นภาระต่อครอบครัว	53(50.5)	27(25.7)	1(1.0)	16(15.2)	8(7.6)
8. ความเจ็บป่วยครั้งนี้เป็นภาวะที่ร้ายแรง	73(69.5)	20(19.0)	2(1.9)	10(9.5)	0(0.0)
ด้านความสามารถในการควบคุมหรือรักษา					
ความเจ็บป่วยที่เกิดขึ้น					
1. การพักผ่อนหรือการนอนช่วยให้อาการของท่านดีขึ้นได้	29(27.6)	37(35.2)	2(1.9)	12(11.4)	25(23.8)
2. การได้รับการรักษาจากบุคลากรในทีมสุขภาพช่วยทำให้อาการของท่านดีขึ้น	74(70.5)	27(25.7)	2(1.9)	2(1.9)	0(0.0)
3. การรับประทานยาต่างๆ เช่น ยาต้ม ยาแก้อาการปวด หรือยาอมได้ลั้นจะช่วยทำให้อาการของท่านดีขึ้น	11(10.5)	43(41.0)	11(10.5)	28(26.7)	12(11.4)
4. โอกาสที่จะหายจากอาการหรือความเจ็บป่วยครั้งนี้ขึ้นอยู่กับโชคชะตาเป็นสำคัญ	7(6.7)	15(14.3)	7(6.7)	36(34.3)	40(38.1)
5. การพยายามรักษาความเจ็บป่วยด้วยตนเองของท่านจะทำให้อาการของท่านแย่ลง	2(1.9)	11(10.5)	5(4.8)	29(27.6)	58(55.2)

APPENDIX C

ETHICAL CLEARANCE

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เอกสารรับรองโครงการวิจัยในมนุษย์
คณะกรรมการจริยธรรมเกี่ยวกับการวิจัยในมนุษย์
โรงพยาบาลพุทธชินราช พิษณุโลก

ชื่อโครงการ	ปัจจัยที่มีอิทธิพลต่อการตัดสินใจมารับการรักษาของผู้ป่วยกล้ามเนื้อหัวใจตายเฉียบพลัน
ชื่อหัวหน้าโครงการ	นางสาวนุชนาต ไกรรัตน์เจริญ
เลขที่โครงการ/รหัส	-
สังกัดหน่วยงาน	นิสิตปริญญาโทบัณฑิต คณะพยาบาลศาสตร์ มหาวิทยาลัยมหิดล
การรับรอง	ขอรับรองโครงการวิจัยดังกล่าวข้างบนนี้ได้ผ่านการพิจารณาและรับรองจากคณะกรรมการจริยธรรมเกี่ยวกับการวิจัยในมนุษย์ โรงพยาบาลพุทธชินราช พิษณุโลก เมื่อวันที่ 28 เมษายน 2548

ลงนาม



(นายแพทย์ธีระ ศิริธารวัฒน์)

ประธานคณะกรรมการจริยธรรมเกี่ยวกับการวิจัยในมนุษย์



No. 95/2005

**Documentary Proof of Ethical Clearance
The Committee on Human Rights Related to
Human Experimentation
Mahidol University, Bangkok**

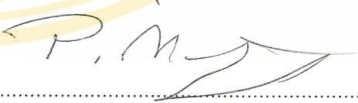
Title of Project. Factors Influencing the Decision to Seek Treatment of Patients with Acute Myocardial Infarction
(Thesis for Master Degree)

Principle Investigator: Miss Nuchanat Krairatcharoen

Name of Institution. Faculty of Nursing

Approved by the Committee on Human Rights Related to Human Experimentation

Signature of Chairman.  (Professor Dr. Srisin Khusmith)

Signature of Head of the Institute.  (Professor Dr. Pornchai Matangkasombut)

Date of Approval. 27 JUL 2005

APPENDIX D

Testing Assumptions of Multiple Regression Analysis

The assumptions were tested before using multiple regression analysis included normal distribution, homoscedasticity, multicollinearity. The results for each assumptions were presented as follows:

1. Normal distribution

The relationship between x and y must be linear. The residuals were tested for approximately normal distribution . If the distribution of the residual was normal; with one peak of 0.25 of a standard deviation above the mean; it meant the relationship is linear . Besides, the dependent variable is normally distributed for each value of the independent variables (SPSS, 1999 cited by Munro, 2001). It has been showed that a histogram of the standardized residuals was approximately normal and presented as follow (Figure 2):

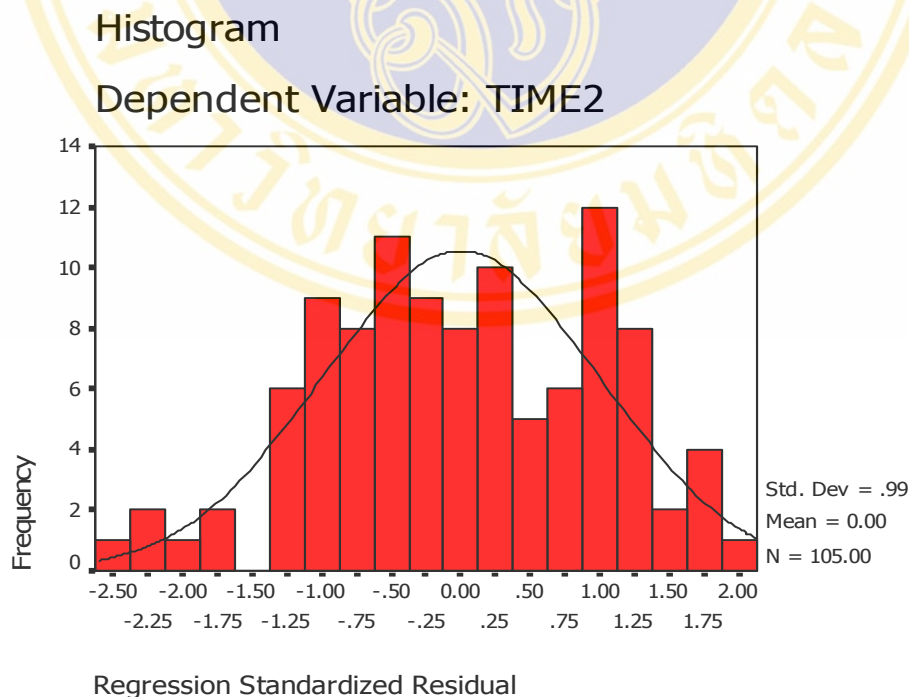


Figure 2 Histogram of residuals

2. Homoscedasticity

To check this assumption, the residuals can be plotted against the predicted values and against the independent variables. When standardized predicted values are plotted against observed values, the data would form a straight line from the lower-left corner to upper right corner, if the model fit the data exactly. The results were revealed that the actual scores varies around the prediction line, but in general they cluster fairly close to line (Figure 3).

Then the residuals from a normal distribution, the plotted values fell close to the line of normal probability (Figure 4).

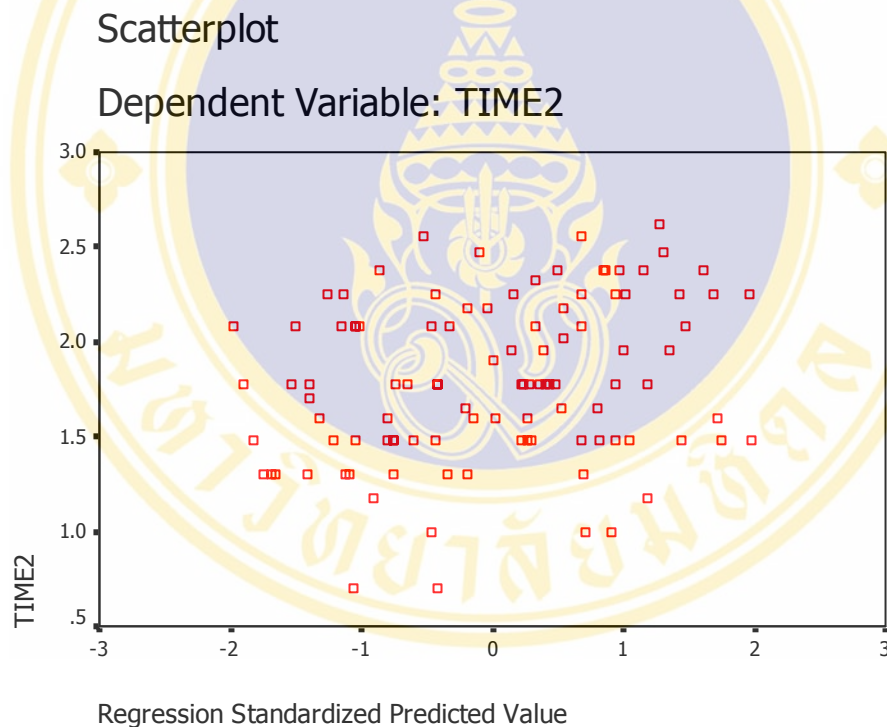


Figure 3 Scatter plot between regression residuals and regression predicted values

Normal P-P Plot of Regression Standard

Dependent Variable: TIME2

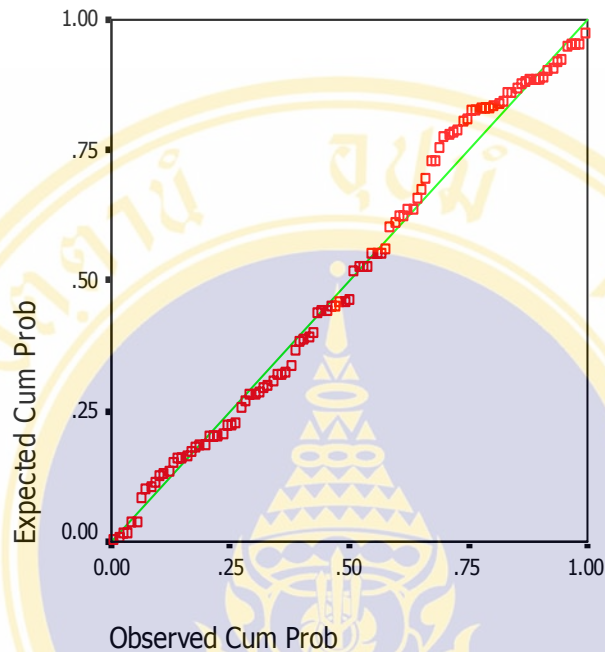


Figure 4 Normal P-P plot of regression standardized residual

3. Multicollinearity

The Pearson's Product Moment Correlation was performed to examine the relationship among independent variables. The result of this analysis revealed that the highest correlation coefficient among the variables was 0.34 (Table 7) which not higher than 0.65 (Buens & Grove, 1993). That is an issue of multicollinearity was not in concern.

In summary, multiple regression analysis was employed in this study because the data have met all the assumptions required by this method.

APPENDIX E

CONSENT FORM

คำอธิบายโครงการวิจัย

เรื่อง ปัจจัยที่มีอิทธิพลต่อการตัดสินใจมารับการรักษาของผู้ป่วยกล้ามเนื้อหัวใจตายเฉียบพลัน

ดิฉัน นางสาวนุชนาถ ไกรรัตน์เจริญ นักศึกษาปริญญาโท สาขาการพยาบาลผู้ใหญ่ คณะพยาบาลศาสตร์ มหาวิทยาลัยมหิดล กำลังทำวิจัยเรื่อง ปัจจัยที่มีอิทธิพลต่อการตัดสินใจมารับการรักษาของผู้ป่วยกล้ามเนื้อหัวใจตายเฉียบพลัน ท่านเป็นบุคคลหนึ่งที่มีความสำคัญยิ่งในการให้ข้อมูลครั้งนี้ จึงขอความร่วมมือในการตอบแบบสัมภาษณ์ ซึ่งจะใช้เวลาประมาณ 20-30 นาที แบบสัมภาษณ์นี้มีทั้งหมด 2 ส่วน คือ

ส่วนที่ 1 แบบสัมภาษณ์ข้อมูลทั่วไป ประกอบด้วย ข้อมูลส่วนบุคคล และข้อมูลเกี่ยวกับสถานะทางคลินิกและพฤติกรรมสุขภาพ

ส่วนที่ 2 แบบสัมภาษณ์เพื่อประเมินการรับรู้ภาวะความเจ็บป่วยของผู้ป่วยกล้ามเนื้อหัวใจตายเฉียบพลัน

การตอบแบบสัมภาษณ์ชุดนี้ท่านสามารถตอบได้ตามความรู้สึกที่แท้จริงของท่าน ข้อมูลที่ได้จากท่านครั้งนี้ จะนำไปใช้ในการวางแผนการปฏิบัติการพยาบาลเพื่อส่งเสริมการรับรู้ภาวะความเจ็บป่วยที่ถูกต้องของผู้ป่วยกล้ามเนื้อหัวใจตายเฉียบพลันเมื่อเกิดอาการของโรคขึ้น อันจะส่งผลให้ผู้ป่วยมีการตัดสินใจมารับการรักษาอย่างเหมาะสมต่อไป การเข้าร่วมการวิจัยครั้งนี้เป็นไปโดยความสมัครใจของท่าน ไม่ว่าท่านจะเข้าร่วมการวิจัยหรือไม่ก็ตาม จะไม่มีผลกระทบต่อค่าบริการหรือการรักษาที่ท่านหรือผู้ที่เกี่ยวข้องกับท่านมีสิทธิ์จะได้รับแต่ประการใด หากท่านยินดีเข้าร่วมการวิจัยหรือเกิดการเปลี่ยนใจในระหว่างการวิจัยท่านมีสิทธิ์ที่จะถอนตัวได้โดยไม่มีข้อแม้ใดๆ ข้อมูลที่ได้จากท่านทั้งหมดจะเป็นความลับและนำเสนอผลการวิจัยในภาพรวมเท่านั้น

ในระหว่างการเข้าร่วมการวิจัย ถ้าท่านมีข้อสงสัยใดๆ ดิฉันยินดีตอบข้อสงสัยของท่านตลอดเวลา การวิจัยครั้งนี้จะสำเร็จตามวัตถุประสงค์ด้วยความอนุเคราะห์และความร่วมมือจากท่านที่กรุณาเสียสละเวลาในครั้งนี้ จึงขอกราบขอบพระคุณมา ณ โอกาสนี้ด้วย

นุชนาถ ไกรรัตน์เจริญ

ผู้ดำเนินการวิจัย

ใบยินยอมเข้าร่วมโครงการวิจัยในมนุษย์

โดยได้รับการบอกกล่าวและเต็มใจ (Informed Consent Form)

เรื่อง ปัจจัยที่มีอิทธิพลต่อการตัดสินใจมารับการรักษาของผู้ป่วยกล้ามเนื้อหัวใจตายเฉียบพลัน

วันที่ให้คำยินยอม วันที่ เดือน พ.ศ.

ก่อนที่ข้าพเจ้าจะลงนามในใบยินยอมในการวิจัยนี้ ข้าพเจ้าได้รับการอธิบายจากผู้วิจัยถึงวัตถุประสงค์ของการวิจัย วิธีการวิจัย รวมทั้งประโยชน์ที่จะเกิดจากการวิจัย เรื่อง ปัจจัยที่มีอิทธิพลต่อการตัดสินใจมารับการรักษาของผู้ป่วยกล้ามเนื้อหัวใจตายเฉียบพลัน อย่างละเอียด และมีความเข้าใจดีแล้ว

ผู้วิจัยรับรองว่าจะตอบคำถามต่างๆ ที่ข้าพเจ้าสงสัยด้วยความเต็มใจ ไม่ปิดบังซ่อนเร้นจนข้าพเจ้าพอใจ

ข้าพเจ้ามีสิทธิที่จะบอกเลิกการเข้าร่วมโครงการวิจัยนี้เมื่อใดก็ได้ และเข้าร่วมโครงการนี้ด้วยความสมัครใจ และการบอกเลิกการเข้าร่วมโครงการวิจัยนี้จะไม่มีผลกระทบใดๆ ต่อการได้รับการบริการหรือการรักษาที่ข้าพเจ้าหรือผู้เกี่ยวข้องมีสิทธิได้รับแต่ประการใด

ผู้วิจัยรับรองว่าจะเก็บข้อมูลเฉพาะที่เกี่ยวกับตัวข้าพเจ้าเป็นความลับ และจะเปิดเผยได้เฉพาะในรูปที่สรุปผลการวิจัย การเปิดเผยข้อมูลเกี่ยวกับตัวข้าพเจ้าต่อหน่วยงานต่างๆ ที่เกี่ยวข้องกระทำได้เฉพาะกรณีจำเป็นด้วยเหตุผลทางวิชาการเท่านั้น

ข้าพเจ้าได้อ่านข้อความข้างต้นแล้ว และมีความเข้าใจดีทุกประการ จึงได้ลงนามในใบยินยอมนี้ด้วยความสมัครใจ

ลงชื่อ ผู้ยินยอม

(.....)

ลงชื่อ พยาน

(.....)

ลงชื่อ พยาน

(.....)

ลงชื่อ ผู้วิจัย

(นางสาวนุชนาถ ไกรรัตน์เจริญ)

APPENDIX F

RESEARCH INSTRUMENT

เครื่องมือที่ใช้ในการวิจัย

เรื่องปัจจัยที่มีอิทธิพลต่อการตัดสินใจมารับการรักษาของผู้ป่วยกล้ามเนื้อหัวใจตายเฉียบพลัน

ส่วนที่ 1 แบบบันทึกข้อมูลทั่วไป

คำชี้แจง โปรดเติมข้อความลงในช่องว่างและเขียนเครื่องหมาย ✓ ลงใน () หน้าข้อความที่ตรงกับท่าน

ข้อมูลส่วนบุคคล

1. เพศ () ชาย () หญิง

2. อายุ..... ปี

:

:

ข้อมูลเกี่ยวกับสถานะทางคลินิกและพฤติกรรมสุขภาพ

1. ท่านได้รับการวินิจฉัยว่ามีภาวะกล้ามเนื้อหัวใจตายเฉียบพลันเป็นครั้งที่

2. ในการเจ็บป่วยครั้งนี้ ท่านนอนโรงพยาบาลมาแล้วเป็นเวลา วัน

:

(สำหรับผู้วิจัย)

9. เวลาที่ผู้ป่วยมาถึงโรงพยาบาลคือ น.

10. รายละเอียดการวินิจฉัยที่ผู้ป่วยได้รับ

ส่วนที่ 2 แบบสัมภาษณ์เพื่อประเมินการรับรู้ภาวะความเจ็บป่วยของผู้ป่วยกล้ามเนื้อหัวใจตายเฉียบพลัน

คำชี้แจง แบบสัมภาษณ์นี้ต้องการทราบถึงการรับรู้ต่อภาวะกล้ามเนื้อหัวใจตายเฉียบพลันของท่านในด้านลักษณะของอาการที่เกิดขึ้น สาเหตุของการเกิดความเจ็บป่วย ระยะเวลาที่คาดว่าความเจ็บป่วยจะดำเนินไป ผลที่คาดว่าจะเกิดตามมาภายหลังจากความเจ็บป่วย และความสามารถในการควบคุมหรือรักษาความเจ็บป่วยที่เกิดขึ้น

1. การรับรู้ภาวะความเจ็บป่วยด้านลักษณะของอาการที่เกิดขึ้น

โปรดระบุว่าการเจ็บป่วยครั้งนี้ของท่าน ท่านเกิดอาการดังต่อไปนี้หรือไม่ โดยทำเครื่องหมาย / ลงในช่องว่างที่ตรงกับความรู้สึกรู้สึกของท่าน

ลักษณะอาการที่เกิดขึ้น	เกิด	ไม่เกิด
1. เจ็บตื้อๆ บริเวณหน้าอก		
2. ใจสั่น		
:		
:		
13. แสบขอดอก		

การรับรู้ภาวะความเจ็บป่วยด้านสาเหตุของการเกิดความเจ็บป่วย ระยะเวลาที่คาดว่าจะความเจ็บป่วยจะดำเนินไป ผลที่คาดว่าจะเกิดตามมาภายหลังจากความเจ็บป่วย และความสามารถในการควบคุมหรือรักษาความเจ็บป่วยที่เกิดขึ้น

การตอบแบบสัมภาษณ์

ให้ท่านทำเครื่องหมาย / ลงในช่องว่างที่ตรงกับความคิดเห็นหรือความรู้สึกของท่านมากที่สุดเพียงข้อละ 1 คำตอบเท่านั้น โดยแต่ละคำตอบมีความหมายดังนี้

เห็นด้วยอย่างยิ่ง หมายถึง ข้อความนั้นตรงกับความคิดเห็นหรือความรู้สึกของท่านมากที่สุด

เห็นด้วย หมายถึง ข้อความนั้นตรงกับความคิดเห็นหรือความรู้สึกของท่านเป็นส่วนใหญ่

ไม่แน่ใจ หมายถึง ข้อความนั้นตรงและไม่ตรงกับความคิดเห็นหรือความรู้สึกของท่านเท่าๆ กัน

ไม่เห็นด้วย หมายถึง ข้อความนั้นไม่ตรงกับความคิดเห็นหรือความรู้สึกของท่านเป็นส่วนใหญ่

ไม่เห็นด้วยอย่างยิ่ง หมายถึง ข้อความนั้นไม่ตรงกับความคิดเห็นหรือความรู้สึกของท่านมากที่สุด

2. การรับรู้ภาวะความเจ็บป่วยด้านสาเหตุของการเกิดความเจ็บป่วย

ข้อความ	เห็นด้วย อย่างยิ่ง	เห็นด้วย	ไม่แน่ใจ	ไม่เห็น ด้วย	ไม่เห็น ด้วยอย่าง ยิ่ง
1. ความเจ็บป่วยของท่านครั้งนี้เกิดจากการติดเชื้อโรค					
2. การชอบรับประทานอาหารประเภทที่มีไขมันสูงเป็นสาเหตุความเจ็บป่วยครั้งนี้ของท่าน					
:					
:					
10. สภาวะทางจิตใจและอารมณ์ เช่น มีอารมณ์ร้อน โกรธ, โมโห หรือหงุดหงิดง่ายเป็นสาเหตุหนึ่งของความเจ็บป่วยครั้งนี้ของท่าน					

3. การรับรู้ภาวะความเจ็บป่วยด้านระยะเวลาที่คาดว่าจะความเจ็บป่วยจะดำเนินไป

ข้อความ	เห็นด้วย อย่างยิ่ง	เห็นด้วย	ไม่ แน่ใจ	ไม่เห็น ด้วย	ไม่เห็น ด้วย อย่างยิ่ง
1. ความเจ็บป่วยครั้งนี้ของท่านจะหายในไม่ช้า					
2. ความเจ็บป่วยครั้งนี้ของท่านจะเป็นๆ หายๆ					
:					
:					
:					
:					
5. ความเจ็บป่วยครั้งนี้ของท่านใช้ระยะเวลาในการรักษาไม่นาน แต่ต้องดูแลตัวเองให้ดีขึ้นอย่างต่อเนื่อง					

4. การรับรู้ภาวะความเจ็บป่วยด้านผลที่คาดว่าจะเกิดตามมาหลังจากความเจ็บป่วย

ข้อความ	เห็นด้วย อย่างยิ่ง	เห็นด้วย	ไม่ แน่ใจ	ไม่เห็น ด้วย	ไม่เห็น ด้วย อย่างยิ่ง
1. ความเจ็บป่วยครั้งนี้จะทำให้ท่านไม่สามารถกลับไปทำงานได้ตามปกติ					
:					
:					
8. ความเจ็บป่วยครั้งนี้เป็นภาวะที่ร้ายแรง					

5. การรับรู้ภาวะความเจ็บป่วยด้านความสามารถในการควบคุมหรือรักษาความเจ็บป่วยที่เกิดขึ้น

ข้อความ	เห็นด้วย อย่างยิ่ง	เห็นด้วย	ไม่ แน่ใจ	ไม่เห็น ด้วย	ไม่เห็น ด้วย อย่างยิ่ง
1. การพักผ่อนหรือการนอนจะช่วยให้อาการของท่านดีขึ้นได้					
2. การได้รับการรักษาจากแพทย์ พยาบาลท่านนั้นจะช่วยทำให้อาการของท่านดีขึ้นได้					
:					
:					
5. การพยายามรักษาความเจ็บป่วยด้วยตนเองของท่านจะทำให้อาการของท่านแย่ลง					

BIOGRAPHY

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