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A CAUSAL MODEL OF DELAY IN SEEKING TREATMENT AMONG THAI PATIENTS WITH ACUTE MYOCARDIAL INFARCTION

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การวิจัยครั้งนี้มีวัตถุประสงค์เพื่อทดสอบความสัมพันธ์เชิงสาเหตุระหว่างปัจจัยด้านความรุนแรงของอาการ การให้ความหมายเกี่ยวกับโรค(โดยผู้ป่วย) การเผชิญปัญหา การประเมินตัดสินความรุนแรงของอาการ และการเข้ามารับการรักษาช้า ใช้แบบจำลองการปรับตัวเข้าสู่ภาวะปกติ ของลีเวนทาลและคณะเป็นกรอบแนวทางในการศึกษา กลุ่มตัวอย่างคือ ผู้ป่วยกล้ามเนื้อหัวใจตายเฉียบพลัน จำนวน 160 คน ที่มารับการรักษาในโรงพยาบาล 5 แห่ง ในกรุงเทพมหานคร เก็บรวบรวมข้อมูลโดยใช้แบบบันทึกข้อมูลส่วนบุคคล แบบสอบถามการตอบสนองต่ออาการเจ็บป่วยและแบบสอบถามการเผชิญปัญหาในผู้ป่วยกล้ามเนื้อหัวใจตายเฉียบพลัน วิเคราะห์ข้อมูลโดยใช้สถิติเชิงพรรณนา และ สมการโครงสร้าง

ผลการศึกษา พบว่าโมเดลมีความกลมกลืนกับข้อมูลเชิงประจักษ์ (χ^2=31.18, df = 27, χ^2/df=1.15, p = 0.26, GFI = 0.97, AGFI = 0.92, and RMSEA = 0.03) โดยปัจจัยด้านความรุนแรงของอาการ การให้ความหมายเกี่ยวกับโรค(โดยผู้ป่วย) การเผชิญปัญหา และการประเมินตัดสินความรุนแรงของอาการ สามารถร่วมกันอธิบายความผันแปรของระยะเวลาที่เข้ามารับการรักษาช้าของผู้ป่วยกล้ามเนื้อหัวใจตายได้ร้อยละ 55 ทั้งนี้ปัจจัยที่มีอิทธิพลต่อระยะเวลาที่เข้ามารับการรักษาช้าของผู้ป่วยกล้ามเนื้อหัวใจตายมากที่สุดคือ การเผชิญปัญหา โดยมีอิทธิพลทั้งโดยตรงและโดยอ้อมผ่านการประเมินตัดสินความรุนแรงของอาการ นอกจากนี้ ความรุนแรงของอาการและการประเมินตัดสินความรุนแรงของอาการมีอิทธิพลโดยตรงต่อระยะเวลาที่เข้ามารับการรักษาช้า การให้ความหมายเกี่ยวกับโรค(โดยผู้ป่วย) มีอิทธิพลต่อการเข้ามารับการรักษาช้าโดยอ้อมผ่านการเผชิญปัญหาและการประเมินตัดสินความรุนแรงของอาการ อย่างไรก็ตามผลการศึกษายังพบว่าการตอบสนองด้านอารมณ์ต่ออาการทำหน้าที่ตัวแปรส่งผ่านระหว่างความรุนแรงของอาการกับระยะเวลาที่เข้ามารับการรักษาช้าอย่างไม่มีนัยสำคัญ

ผลการวิจัยบ่งชี้ว่าโมเดลการเข้ามารับการรักษาช้าในผู้ป่วยกล้ามเนื้อหัวใจตายเฉียบพลัน สามารถอธิบายและทำนายระยะเวลาการเข้ามารับการรักษาช้าของผู้ป่วยกล้ามเนื้อหัวใจตายเฉียบพลันได้ ดังนั้นการจัดกิจกรรมการพยาบาลที่ครอบคลุมองค์ประกอบสำคัญอันได้แก่ เพิ่มความสามารถในการประเมินตัดสินความรุนแรงของอาการ เพิ่มความรวดเร็วและแม่นยำในการให้ความหมายเกี่ยวกับโรคกล้ามเนื้อหัวใจตายและเพิ่มความสามารถในการเผชิญปัญหา จะช่วยส่งเสริมผู้ป่วยกล้ามเนื้อหัวใจตายเฉียบพลันให้ลดระยะเวลาที่เข้ามารับการรักษาช้าได้ต่อไป

สาขาวิชา : .....พยาบาลศาสตร์..... ลายมือชื่อนิสิต .....

ปีการศึกษา :...2552..... ลายมือชื่อ อ.ที่ปรึกษาวิทยานิพนธ์หลัก .....

ลายมือชื่อ อ.ที่ปรึกษาวิทยานิพนธ์ร่วม .....

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KEYWORDS: DELAY IN SEEKING TREATMENT / ACUTE MYOCARDIAL INFARCTION / THE SELF-REGULATORY MODEL

SURACHAT SITIPAKORN: A CAUSAL MODEL OF DELAY IN SEEKING TREATMENT AMONG THAI PATIENTS WITH ACUTE MYOCARDIAL INFARCTION. THESIS ADVISOR: PROFESSOR VEENA JIRAPAET, Ph.D., THESIS CO-ADVISOR: ASSISSTANT PROFESSOR CHANOKPORN JITPANYA, Ph.D., 257 pp.

The purpose of this study was to examine the causal relationship among severity of symptom, cognitive and emotional representations, alternative coping strategies, appraisal symptom seriousness, and delay in seeking treatment among Thai Acute Myocardial Infarction (AMI) patients was based on Leventhal's Self-Regulatory model of illness behavior. Stratified random sampling was employed to obtain the sample of 160 AMI patients who visited five hospitals in Bangkok metropolitan. Research instruments consisted of Personal Information Questionnaire, the Response to Symptom Questionnaire (RSQ) and the Coping with Heart Attack Symptom Scale (CHASS). Data were analyzed using descriptive statistics and structural equation modeling.

The goodness of fit indices illustrated that delay to seek treatment model fit with the empirical data (χ^2 =31.18, df = 27, χ^2 /df =1.15, p = 0.26, GFI = 0.97, AGFI = 0.92, and RMSEA = 0.03), and explained 55% of the variance of delay to seek treatment. Alternative coping strategies was the most influential factor affecting delay to seek treatment through appraisal symptom seriousness by having negative indirect effects. In addition, symptom severity and appraisal symptom seriousness had a significant negative direct effect on delay to seek treatment. Cognitive illness representation had a significant negative indirect effect on delay to seek treatment through appraisal symptom seriousness. However, the emotional response to symptom was no significant to perform as directed effect on alternative coping strategies.

The findings indicated the prominent components of nursing intervention focusing on reduce delay time to seek treatment by increase the likelihood and speed with which two modifiable variables appraisal of symptom seriousness and alternative were coping strategies that significance to decrease time to attribution and representation for AMI symptom. Nurses should consider about symptom severity, cognitive and emotional illness representation affecting delay to seek treatment in planning the intervention. This study highlighted important clinical, theoretical, and research implications.

Field of Study: NURSING SCIENCE Student's Signature Surachat S.

Academic Year : 2009..... Advisor's Signature Veena Jirapaet

Co-Advisor's Signature CR

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CHAPTER I

INTRODUCTION

Background and significance of the study

Acute myocardial infarction (AMI) is one of the emergency conditions which required prompt treatment to a reperfusion the heart muscle. Delay in seeking treatment among patients from onset of AMI symptom to the delivery of emergency department for receive reperfusion therapy negatively affect patient's prognosis (Goldberg et al., 2002; De Luca et al., 2004). Death from AMI often occurs within the first 1 to 2 hours after the symptom onset most often due to fatal dysrhythmias and/or cardiogenic shock (Thai Acute Coronary Syndrome registry [TACSR], 2007) – resulting in an increase in medical expenditure and economic costs in Thai society.

In spite of time-dependent effectiveness of therapies for individuals experiencing AMI symptom often delay to seek treatment is a significant problems in worldwide. The classic trial study from Gruppo Italiano Per Studio Della Streptochinasi Nell'Infarcto Miocardico [GISSI], (1986) showed the reduction mortality when administered reperfusion therapy within 1 hour of the onset of symptom by 50% and within 3 hours by 23%. Therefore, GISSI (1986) recommended treatment initiation within 2 hour after onset of symptom. Steg et al., (2003) also confirmed this recommendation. On this study AMI patients were treated with fibrinolysis followed by PCI within 2 hours of onset of symptoms, the 30-day mortality was reduced from 5.2% to 2.2% compare with primary PCI. Taskforce Practice Guidelines for management AMI from American College of Cardiology [ACC] /American Heart Association [AHA], (2004) and Smalling, (2009) also

indicated the critical importance of ischemic time that within 2 hours for management of AMI patients in a new gold standard for AMI patients care.

The value of reducing delay until treatment depends not only on the amount of time saved but also on when it occurs. Available data suggest that time saved within the first 1 to 2 hours has greater biological importance than time saved during the later stages of STEMI (Fibrinolytic Therapy Trialists' [FTT] Collaborative Group, 1994; GISSI, 1986). Turi el al., (1986) reported the trial between 2 group of early and late arrived at hospital, the significantly higher mortality rate was observed in patients who arrived late, i.e., those who arrived more than 2 hours after the onset of chest pain, even though patients with hemodynamic compromise (bradycardia, hypotension) tended to arrive earlier. The difference in long-term mortality between those who arrived early (within 2 hours of onset of chest pain) and those who arrived late was accounted for by the baseline differences between these 2 groups.

The advantages of initiated reperfusion therapy in first few hours are clear. In Thailand, TACSR (The Heart Association of Thailand under the Royal Patronage of H.M. the King, 2007), reported result from 9,373 patients admitted to participating hospitals between August 2002 - October 2005, the resulted showed the median times from symptom onset to hospital arrival time were 4 hours in thrombolysis group and 5 hour 57 minutes in primary PCI group, respectively. In TACSR study also reported that the complication after treatment in AMI patients among these AMI patients was 45.5% had Congestive Heart Failure (CHF), manifestation that the mortality rate was 12.6% (TACSR, 2007), it's more than doubled in comparison with the Global Registry of Acute Coronary Event [GRACE] (4.9%), (Goldberg, R.J. et al. 2002). The raising awareness among general population about urgency of seeking treatment

attention for chest pain and concerted effect to improve time delay is warranted. These data may have an impacted on our health care system and alert the government to adopt an appropriate policy to solve these problems (TACSR, 2007).

Early recognition of symptoms among ST-segment elevation of myocardial infarction [STEMI] in AMI by the patients or someone with the patient is the first step that must occur before evaluation and life-saving treatment can be obtained. The ACC and AHA (2004) delivered the Taskforce on Practice Guidelines for the management of patients with STEMI by using reperfusion therapy can be accomplished by the pharmacologic (fibrinolysis) or catheter-based (primary PCI) approaches, the goal is to keep total ischemic time within 120 min (30 minute from symptom onset to arrival at hospital via Emergency Medical Service and within 30 minutes for initiated thormbolytic therapy and/or 90 within 90 minutes for stated Primary Coronary Intervention (PCI) (ACC/AHA, 2004: e19). In fact, data from published trials indicated that only 3%-10% of patients were received initiated treatment within 1 hour after symptom onset (GISSI, 1986).

Although time to seeking treatment had been frequently studies in Western, but in Thai, it is not well understood. Once a patient experiences the AMI symptoms, the duration of the delay time in seeking treatment period includes the time to recognized the presence of abnormal symptoms, attribute and interpretation the symptoms to condition requiring medical attention, decide to seek treatment, arrange transportation, and travel to the hospital. Each of these actions may influence delay to initiated effective treatment.

Given that effectiveness of reperfusion therapies used in treatment of AMI is time-dependent, many researchers have investigated the phenomenon of delay in

seeking treatment for AMI. However, reviewed of the literature suggests that investigators (Burnett, Blumenthal, Mark, Leimberger, and Califf, 1995; Hanucharurnkul el al, 1998; Sheifer et al., 2000; McKinley et al., 2004; Ottesen, Dixen, Torp-Pedersen, and Køber, 2004; Cheng et al., 2007; and Khraim, Scherer, Dorn, and Carey, 2009) have used a wide variety of approaches to operationalizing delay time. The term of delay in seeking treatment had been inconsistency defined based on the two research aspects: 1) the time from symptom onset to hospital presentation and 2) the total ischemic time of treatment initiation benefit. Use of different cut-off times for the definition of delay time led to the variability of the explained variance, sensitivity, specificity, and predictive values associated with each regression model. More importantly, cut-off times on the definition of delay time did effect the survival and mortality of AMI patients as it related to ischemic time.

Based on the existing knowledge of factors associated with delay in seeking treatment reviewed using the data bases from 1995 through 2009, these factors can be grouped under six major categories are as; 1) socio-demographic factors: women, older age, low socio-economic status, single status, and without health insurance; (2) contextual: onset while at home and being alone; (3) cognitive factors: AMI patients who perceived match/mismatch of symptoms expected and symptoms experienced, perceived control over symptoms, lack of knowledge of AMI, and perceived threat (susceptibility and seriousness); (4) affective/psychological factors: fear of consequences and denial, fear of troubling others, and embarrassment of seeking treatment; (5) behavioral factors: waiting for symptoms to go way/trying to relax, telling someone about symptoms, calling the emergency medical services, calling or visiting the primary care provider; and (6) the clinical factors: past medical

history/coexisting morbidities, and nature of symptoms that associated with delay in seeking treatment, respectively.

The body of knowledge on the intervention studied aim to minimizing AMI patients delay in seeking treatment had limited success (Caldwell and Miskowski, 2000; Hewitt et al., 2004). Therefore, the keys of media community campaigns intervention had contents were address on importance of quick/immediate action, emphasis of sign and symptoms of AMI, importance of calling emergency services, emphasis of treatment such as thrombolytic therapy. Moreover, most of the interventions studied were similar type of interventions, namely public education/media campaigns (e.g. Call fast 911 (Meischke, Dulberg, Schaeffer, Henwood, Larsen, and Eisenberg, 1997), Rapid Early Action for Coronary Treatment [REACT], Luepker et al., 2000) and the Nottingham Heart Watch Campaign (Rowley, Hill, Hampton, and Mitchell, 1982). The recommendation from two systematic review revealed that future interventions should emphasized symptom the evaluation performance, problem solving and decision-making skills or individual intervention not media community campaigns.

According to early Thai studies found that, factors contributing delay in seeking treatment had been different from other resulted from difference of socio-cultural difference, resulted revealed that older age was not significant affect on delay (Changchaywong, 2002; Kriractcharoen, 2006; TACSR, 2007), men had shorter decide to seeking treatment less than women (Aiumsirikul, 1997). In patients with medical history such previous ischemic heart disease, hypertension, and diabetic were associated with delay in seeking treatment (Aiumsirikul, 1997, Changchaywong,

2002; TACSR, 2007). However, few studied were examine on the social, cognitive, and emotional factors influenced treatment seeking delay in Thai AMI patients.

On theoretical frameworks, most of the research in the area of treatment seeking delay among individuals with signs and symptoms of AMI has been atheoretical. Common problem with much of the literature with regard to AMI patients and delay is that much research has been conducted in the absence of an explicit theoretical framework. The consequence being that relationship between empirically derived factors, causal mechanisms and targets for intervention have been poorly defined and do not readily inform an intervention. However, how individual perceived, evaluated, and action for AMI upon symptoms has been the focus of study for a number of decades.

By using a theoretical approach is important step to verified phenomena of delay in seeking treatment among AMI patients to promote greater understanding of how a variety of factors interrelate in a larger context, and could provide health professionals with more guidance with respect to developing intervention to reduce behaviors contribute to delay in seeking treatment for AMI patients.

Considering the theoretical application, aim/usages, and its limitation, this study used the Self-Regulatory Model of Illness Behavior [SRM] (Leventhal, Nerenz, and Steele, 1984) as the theoretical framework for the following reasons. The SRM theory provides a plausible explanation for the patterns of behavior observed in previous studies; the model conceptualizes individuals as rational, individuals problem-solving, but does not exclude the influence of other social factors. The role of emotion in affecting health behavior is acknowledged, an area neglected by other social cognition models (Fishbein and Azjen, 1974; Becker, 1974); A large body of

evidence exists to support the illness representation dimensions and their relationships with coping behaviors and clinical outcomes (Hagger and Orbell, 2003); and the framework had been used successfully with people with AMI and found to be predictive of outcome (Petrie et al. 1996; Johnson and King, 1995; Zerwic, King and Wlasowicz, 1997; Horne et al., 2000; King and McGuire, 2000; McKinley et al., 2000; Buckly et al., 2006; and Walsh et al., (2004) and on Thai literature presented in Krairacharoen (2006).

The relationships among psychological factors such as cognitive and emotional response to AMI symptoms, social and cultural influenced among Thai AMI patients have not been fully studied from prior research. Factors contributing delay in seeking treatment have begun to be investigated in Western countries. Finding from these studies could not be generalized to AMI patients from different cultural backgrounds reflect to patient's believe and help behavior in seeking treatment under health threat condition. Therefore, it is important to explore knowledge regarding.

The delay in seeking treatment is important for nurses to explore. Nurses can learn from the results of factors such as social, cognitive, and emotional influences that lead to an increase delay for seeking treatment. Also, the way in which individuals perceive their symptoms may affect what type of information they seek, the decision to seek treatment, and the urgency in which they seek treatment. Understanding this relationship will help nurses to provide individualized interventions in order to maximize positive patient outcomes. Nurses can save lives by developing interventions to address the deeper understanding on cognitive

response to AMI symptoms, emotional and social influences that are related to increase delay for seeking treatment for AMI.

Consequently, understanding the relationship between selected variables by derived from the SRM theory (severity of symptom, cognitive illness representation due to the heart related, appraisal symptom seriousness, emotional response to symptom, alternative coping strategies) and delay time to seek treatment as the predict outcome of patient's on the delay seek treatment among Thai AMI patients will enhance the knowledge for develop substantial effective nursing interventions to decrease delay in seeking treatment. To fill this gap of knowledge, the present study is aimed at developing the causal model to explain the relationship of delay in seeking treatment of Thai AMI patients and to examine the relationship between factors influencing this delay among Thai AMI patients.

There was need to examine the causal model of delay in seeking treatment among Thai AMI patients because of 1) in Thailand has an increased incidence of cardiovascular disease which will turn into AMI; 2) delay in seeking treatment is significantly to the mortality and morbidity rate in AMI patients; 3) psychological factors play the important role or as the mediator of treatment seeking delay in patients interpret with and response to AMI symptoms, but never been found from Thai literature, and; 4) as therapeutic efforts and nursing intervention focus more on improving patient function and well being, the need to understand the causal relationships of delay in seeking treatment in AMI will facilitate the design of optimally effective nursing interventions.

Furthermore, study of the causal model of delay in seeking treatment provides more understanding of both direct and indirect relationships among factors effecting delay in seeking treatment in Thai AMI patients. As a result of this study, development of a more complete causal model of variables influencing delay to seeking treatment provide important information for clinical nurses and researchers attempting to develop effective interventions to reduced delay time in seeking treatment for Thai AMI patients.

Research questions

1. Do the severity of symptom and appraisal of symptom seriousness have a direct effect on delay to seeking treatment among Thai AMI patients?

2. Do the severity of symptom have a direct effect on cognitive illness representation and emotional response to symptom and it had indirect effect on delay to seeking treatment through alternative coping strategies and appraisal of symptom seriousness?

3. Do the cognitive illness representation and emotional response to symptom have a direct effect on alternative coping strategies and, it have indirect effect on delay to seeking treatment through appraisal of symptom seriousness?

4. Do the alternative coping strategies have a direct effect on appraisal of symptom seriousness and, it has indirect effect on delay in seeking treatment?

5. Does the hypothesized causal model explaining delay in seeking treatment among Thai AMI patients in view of their severity of symptom, cognitive illness representation, emotional response to symptom, alternative coping strategies, and appraisal of symptom seriousness adequately fit the data?

Purpose of the study

1. To develop the causal model for explaining delay in seeking treatment including severity of symptom, cognitive illness representation, emotional response to symptom, alternative coping strategies, appraisal of symptom seriousness and delay to seek treatment among Thai AMI patients.

2. To examine the causal relationship among variables including severity of symptom, cognitive illness representation, emotional response to symptom, alternative coping strategies, appraisal of symptom seriousness and delay to seek treatment among Thai AMI patients.

Conceptual framework

This study was judged by the Self-Regulatory Model (SRM) (Leventhal, Meyer, and Nerenz, 1984). The research model is developed by integrating SRM with significant variables including severity of symptom, cognitive illness representation, emotional response to symptom, alternative coping strategies, and appraisal of symptom seriousness and delay to seek treatment. The interrelationships among these variables in the model are presented as follows**:**

The SRM describes the mental process that an individual uses to evaluate changes in body sensations and determine the coping process to solve health-threatening problems. The theory assumes that health-related behavior is based on two interactive and individualized components: cognitive and emotional. The cognitive component guides the information used in understanding and interpreting the health threat (Johnson, 1997). An individual's knowledge about the health threat is organized and represented in the memory and guides the individual's behavior

(Leventhal and Diefenbach, 1991). The emotional component of the theory reflects the individual's affective association to the knowledge-based evaluation of the health-threatening situation (Leventhal, Nerenz, and Straus, 1982). Because the cognitive and emotional components are interactive, the individual's physical experience such as pain severity or health threat affects the individual's interpretation of the health threat and affects the associated health-related behavior (Leventhal, et al., 1982).

The SRM identifies three stages that regulate the individual's behavior during an AMI event. The three stages are cognitive- and emotional-representation, alternative coping strategies and symptom appraisal (Baumann and Leventhal, 1985; Leventhal et al., 1980). Cognitive- and emotional-representation is characterized as the point at which information is perceived, organized and interpreted (Leventhal et al., 1982). The cognitive component of the representation stage occurs when the individual evaluates changes in body sensation or any deviation in health based on his/her knowledge or information, which is often obtained from public media or experience. The emotional component of representation comes mainly from cultural learning or family values about how to respond to bodily sensations. After the knowledge-based representation, the health threat is labeled and the individual becomes aware of the symptoms, and judges the seriousness of them.

The second component is alternative coping strategies, in which the individual develops an action plan or coping strategy based on the outcome of the representation stage. Behavior characterizes the cognitive process of this stage. The specific behavior that the individual selects depends on the information contained in the representation. For example, if the individual considers AMI symptom severity as a symptom of a heart problem, he/she may cope with this by calling the physician or

going to the emergency room; if the individual considers AMI symptom severity to be a symptom of a cold or excessive physical activity, he/she may cope with it by resting. The emotional component of this stage depends on how the individual perceives the threat in the presentation stage. Consideration of the individual's information helps the individual manage the emotional response to the threat. If chest pain is perceived as related to the heart, this perception will create more fear than if chest pain is perceived as related to a cold or excessive physical activity; thus, patients will delay to seek treatment.

The third component is appraisal symptom seriousness. In this stage, the AMI patients evaluate and reassess the alternative coping strategies based on the individual's desired outcomes. The desired outcome might be symptom relief or return to the previous state of equilibrium. The coping response and representation stages may be altered based on the appraisal; for example, if AMI symptom severity was perceived as being less serious and a symptom of a cold or excessive physical activity, and the coping strategy is not effective, the individual may try other coping strategies. Emotions can influence symptom interpretation and affect the representation, coping and appraisal. For example, AMI symptom severity may create a high level of fear and anxiety if thought to be related to the heart. This can exaggerate the pain and cause the individual to act instead of waiting. Leventhal, et al. (1984) proposed that the three stages that comprise the model are influenced by the individual's knowledge about the disease and past similar experience.

In the present study based on the proposed conceptual model, The onset of health threat, such as AMI symptom, stimulates the formulation of a response in the patients, which process follows a pair of district, parallel pathways. AMI patients

gather both concrete and abstract information from the diverse sources available in their context in order to construct illness representations. Patients generate a continuous, internal, subjective response to and conceptualization of both their illness and its treatment based on direct, somatic experience of symptom, such as the presence or absence of pain intensity when AMI patient experiences from severity of symptom but symptom of AMI often presents with a cluster of symptoms, not just only chest pain, and many people do not realize that the chest sensations of AMI are often not severe and may have qualities not typical of pain. Clearly, some individuals have trouble reconciling their actual symptoms with their preconceptions (Sheifer, et al., 2000).

Illness representations chance and patient behavior change along with it, in turn affecting health outcomes. For example, AMI patients may initially regard the timeline the AMI symptom is acute event in nature, if patients had less severity or symptom for example; it's came and went, timeline of this patients was a chronic conditions cause by other disease not due to heart related. That influence coping strategies and appraisal stage, AMI patients response with less pain to chronic condition, then will select coping strategies for try to relive it or distract attention to normal activity, and next appraisal symptom as non seriousness that associated with delay in seeking treatment.

If AMI symptom was intermittent pain, and their interpretation involves a number of cognitive-perceptual processes, which are subject to both psychological and social influence that have been made to delineate the cognitive representations of illness. Five components of a cognitive representation of illness emerge: identity, causes, timeline, consequence, and control (Leventhal, Nerenz, and Straus, 1982).

Identity; the identity component is concerned with the patient's idea about nature of AMI condition associated with sign an symptoms, and link between these.

Cause: this component comprises the patients' ideas about the likely or causes of the illness, and ideas about how they got the disease, for example, as a consequence of genetic factors or of environment such as very hot or non-cardiac in origin, mean that from stomach, fatigue, tried.

Time-line: This component indicates the patients' expectations about the duration of illness with AMI symptom, its characteristic course, and the perceptions whether the illness will acute or chronic.

Consequences: this component reflects the patient's idea about the illness severity and likely impact on their physical, social, and psychological functioning, including both the short-term and long-term effect of presenting AMI symptom (sudden death, heart failure), and the consequence from social influence (trouble other people).

Cure/controllability: this component indicates the extent to which patient's believes condition is amenable to cure or control over the symptoms. It's reflect patients ideas about what she/he can do to bring about AMI symptom.

Relationships between content in cognitive illness representations and delay to seek treatment are documented in several studies (Dracup and Moser, 1997; McKinlay, Moser, and Dracup, 2000; Noureddine, Arevien, Adra, and Puzantien, 2008) examine the relationship between symptom attribution the cause of symptom and AMI delay in seeking treatment. All of these studies found that attribution of symptom to the heart was associated with reduced delay. On the multivariate analysis, Wu, Zhang, Li, Hong, and Huang, (2004) used logistic regression to examine the

predictors of delay in 102 AMI patients in China. Their studied found that patients who attributed their AMI symptom to the heart was an independent predictor of decision delay (β = -0.594, p = 0.043). Morgan (2003) also studied symptom congruence of AMI patients compare actual symptom and expected symptom that represent AMI identity component in illness representation. This finding indicated that, symptom expected and actually occurred vary base on gender. “Overall, how well did the symptom of your heart attack match what you expected a heart attack would be like? Mean score = 3.46; 1 = completely matched; 5 = did not matched at all. Correlation with time to treatment r = .113, p =.274.

In correlated with alternative coping strategies, individuals who interpret their symptom incorrectly tent to assign them a more benign illness label. Thus, it is logical to assume that those who attribute their symptoms to benign illnesses are less likely to seek immediate medical care (Burnett et al., 1995). Instead, they are likely to attempt to self-treat or ignore their symptoms and to employ other strategies that do not include activating EMS or going to the hospital. However, it is also possible that the use of emotion-focused coping may impact one’s ability to correctly attribute the symptoms to the heart. As Reynolds and Alonzo (2000) pointed out that excessive use of emotion-focused strategies may impede one’s ability to adopt the correct illness representation.

Alternative coping strategies represent sequential steps in coping stage. Coping strategies reflects both cognitive and affective components. For instance, if individuals call for medical help, they are assumed to use their information to deal with the health threat. If AMI patients selected avoidance was used, they are assumed to use emotions to deal with the threat. Evaluation of coping response occurs and may

change over times through a process of reevaluation of the coping strategies. If a patient finds that rest does not provide comfort, he/she may begin another coping strategy such as calling his/her doctor or calling 1669. However, the desired outcome may be more than symptom relief. It may also be different from one individual to another. The cognitive part of coping is the problem solving effort that reflects choosing treatment options, and the emotional part is the emotional response that arises from a stressful situation.

On the appraisal stage, Johnson, Feiler, Jones, Wlasowicz & Mitchell (1997), an individual's goal is to minimize the effect of the health threat and to be emotionally comfortable. It is believed that if an individual chooses an appropriate coping strategy, For instance, if individuals call for medical help, they are assumed to use their information to deal with the health threat. If, avoidance is used, they are assumed to use emotions to deal with the threat.

Any of three stages may be influenced by emotional reactions. The individual may have to generate additional coping plans and appraise coping to control the emotional reactions. The processes involved in coping with emotional reactions are often parallel to the cognitive processes involved in the representation and coping with the health danger itself. Leventhal and Cameral (1987) provided an example of how emotional reactions affect the cognitive threat. They proposed that that a strong fear appeal may interact with temporarily interfere with health protective behavior when an individual suspects that he may have cancer and decides that he needs examinations, but delays in doing so because he is fear the findings. The adapted model includes emotional experiences such as being embarrassed to get help, anxiety, or fear of what might happen.

On the appraisal of symptom seriousness theorized to influence AMI patient's delay in seeking treatment through cognitive and emotional function. Since the severity of symptoms of AMI are often intermittent from AMI patients, they may go unrecognized and not be perceived as being important. This perception, in turn, may lead many AMI patients to delay seeking treatment, which reduces their chances for effective treatment. An individual with appraised symptom are less serious condition are more likely to attempt delay to seek treatment. Most empirical research have supported the appraisal symptom seriousness is strongly correlated with delay time to seek treatment for AMI patients (Bleeker et al., 1995; Burnett, Blumenthal, Mark, Leinbergrm and Coliff, 1995; Dracup and Moser, 1997; Meischke et al., 1999, Mohamed, 2007)

In short, severity of symptom variables are delineated the internal stimuli essential determinants for seeking treatment delay. This research model proposes that participants with mild to intermittent symptom severity have longer delay to seek treatment; and will have correlate with cognitive illness representation that there can't interpretation of symptom as cardiac in origin, then used alternative coping action for deal these symptom, the appraisal of symptom as show not seriousness of symptom that associated with delay time to seek treatment. At the same time, individuals with a severity of symptom that effect to increase level of emotional response to symptom, then patients used coping action to deal with emotional reaction to distraction, denial, avoidance will use, in addition the appraise symptom as more seriousness that significant to shorten delay time.

In conclusion, this study evaluates delay in seeking treatment by testing the SRM model in AMI patients during the cardiac symptom event before admission. This study also examines the direct and indirect effect of severity of symptom, cognitive and emotional representations, alternative coping strategies, appraisal symptom seriousness, and time of delay in seeking treatment. The conceptual framework derived from the SRM is illustrated in figure 1.1

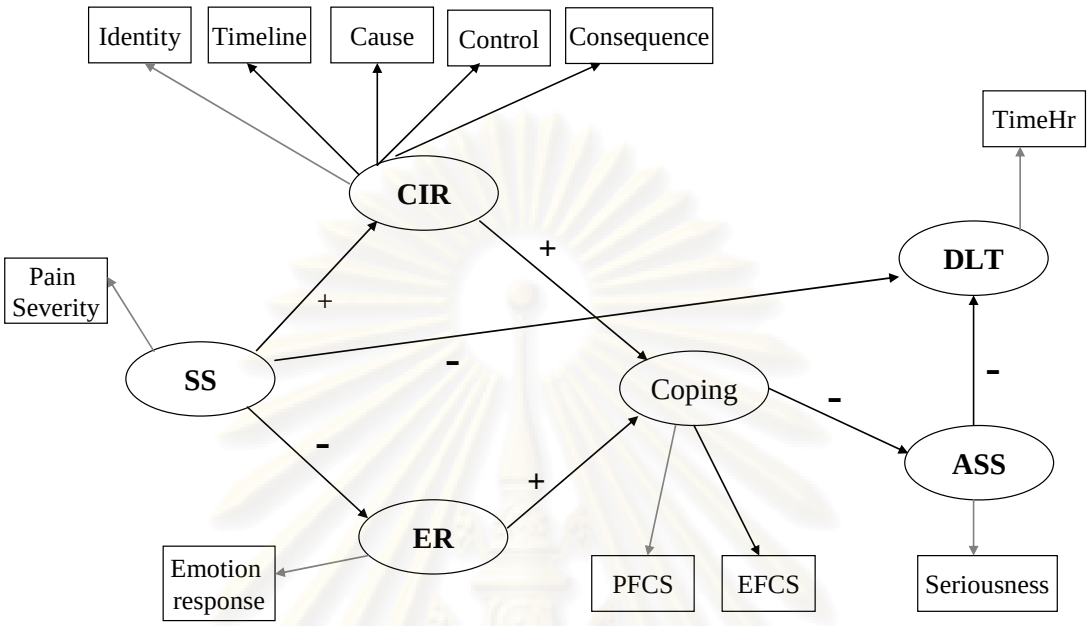


Figure 1.1 Hypothesized causal model of delay in seeking treatment in AMI patients

Note:

SS = Severity of Symptom
CIR = Cognitive Illness Representation
ER = Emotional Response to symptom
Coping = Alternative Coping Strategies
PFCS = Problems-focused coping
EFCS = Emotional-focused coping
ASS = Appraisal symptom seriousness
DLT = Delay to seek treatment

Research hypotheses with rational

The research hypotheses are listed in the following six statements:

Hypothesis 1: Severity of symptom has a positive direct effect on cognitive illness representation, but it's had a negative direct effect on emotional response to symptom and delay to seek treatment and it's has a negative indirect effect on delay to seek treatment through alternative coping strategies and appraisal symptom seriousness

Rationale: severity of symptom was derived from stage of sources of information, from bodily experience that has been identified by Leventhal and others (1984) as basic source of information used in the process of defining an illness experience and refers to the symptom that AMI patients experience. The AHA (2005) describes the AMI warning signs as "starting slowly" with mild pain and discomfort" Chest pain is the most common symptom of AMI in both men and women. If symptom of AMI presentation had intermittent of symptom severity such as less pain intensity and discomfort that occurs. The nature of symptoms presentation was found to influence delay in seeking treatment, while having continuous or high level of symptoms intensity predicted short pre-hospital delay (Banks and Dracup 2006; Horne, et al., 2000; Goldberg, at al. 1999; McKinlay, Moser, and Dracup, 2000: Schmidt and Borsch, 1990).

Hypothesis 2: Cognitive illness representation has a positive direct effect on alternative coping strategies and an indirect effect on delay to seek treatment through alternative coping strategies and appraisal symptom seriousness.

Rationale: On the cognitive and emotional response to AMI symptom; individual may response with cognitive representation as identity AMI symptom with match with preconceive notion or not, identified potential cause, perceive timeline of symptom as chronic or acute event, belief in ability to control over the symptom and fear of the consequence of symptom that is cognitive domain proposed by The Self-Regulatory Model of illness behavior Model (Leventhal and colleges,1984), this model were frequently used for explore phenomenon of delay in seeking treatment. Cameron et al conducted 111 interviews amongst people spontaneously seeking medical care from their physician (Cameron et al. 1993). They compared the illness representations of treatment-seekers with 111 matched controls. The authors found that care seekers were more likely than controls to have identified their symptom problems with a disease label ($p<0.02$).

Symptoms were rated as more serious by treatment-seekers than by controls ($p<0.001$) and ratings of symptom disruption of daily activities were higher for treatment-seekers compared to controls ($p<0.01$). The data from this study support the hypothesis that symptoms play a key role in the initiation of treatment seeking.

Hypothesis 3: Emotional response to symptom has a negative direct effect on alternative coping strategies and it has a negative indirect effect on delay to seek treatment through on alternative coping strategies and appraisal symptom seriousness

Rationale: On emotional response to symptom, higher of anxiety can reduced delay to seek treatment. Schmidt and Borsch, (1990) and Dejong et al., (2004) reported resulted reveal that, level of anxiety had significance predictor appraisal of symptom as serious in AMI patients; feelings of embarrassment have been shown be

significant factors in delay (Dracup and Moser, 1997; Mishke, et al., 2000). According to the studied of McKinlay, Moser, and Dracup (2000) who study compare between USA and Australia, AMI patients who used emotional response to symptom, Australian AMI patients had an embarrassment about seeking help correlated with delay similarly with Noureddine, Arevian, Adra, and Puzantiean, (2008) who found that AMI patients from Lebanon had delay because they fear what may happen. The potential for feeling embarrassed increases when symptoms occur after business hours or on the weekend and when patients consider the possibility that their symptoms are not really serious (Mishke, et al., 2000).

Hypothesis 4: The Alternative coping strategies has a negative direct effect on appraisal symptom seriousness and has positive indirect effected on delay to seek treatment through appraisal symptom seriousness.

Rationale: On alternative coping strategies, that can divide into two groups are; 1) patients used problem focused coping these include with self-treatment and seek social support were associated with delay to seek treatment. AMI patients had used taking medications (Dracup, et al, 1997) wait for symptoms to go away (Raczynski, et al., 1999). Self-treatment with prescription medication, including nitrates and nonprescription medications (for example, antacids), is a frequent cause of delay among AMI patients, including those with a history of AMI (Leslie, et al., 2000). Walsh et al., (2004) study AMI patients from England reported that, AMI patients who used problem-focused coping to deal with AMI symptom are shorten delay time ($r = -.46$, $P<.01$). And 2) emotional focused coping, patients who waited for symptoms to go away or tried to relax, based on past experiences or denial of

illness, were more likely to delay longer than people whose initial behavior was toward seeking professional healthcare (Noureddine et al., 2006; Okhravi, 2002; McKinley, Moser , and Dracup, 2000). In addition, Fox-Wasylyshyn, (2005) tested the relational proposition used structural modeling strategies found that, emotional-focused coping only significant predicted delay in seeking treatment in AMI patients

Hypothesis 5: The appraisal symptom seriousness has a negative direct effect on delay to seek treatment.

Rationale: The appraisal symptom seriousness is defined the degree in which patients estimation of the symptom of AMI comparing with pre-conceivenotion and the past experience for more important to rapid response. The empirical data supported these hypotheses, Mohamed (2007) reported that, patients appraise of symptom seriousness had the most direct, indirect and total effect on tension/anxiety and time-to-treatment. Consistent with result of Dejong et al., (2004), found that patients appraise the seriousness of their symptoms had significant proportion of variance (R^2 = .34).

Scope of the Study

This study examined the causal relationships of delay to seek treatment in AMI patients who had ischemic time delay equal and more than 2 hours. The settings were Medical ward, CCU, and ICU of 5 hospitals in Bangkok, Thailand. The independent variables were severity of symptom, cognitive illness representation, emotional response to symptom, alternative coping strategies and appraisal symptom seriousness, while delay to seek treatment served as dependent variable of the study.

This study used definition of delay time to seek treatment based on the aspect of ischemic time for maximum of treatment initiation benefit by using the critical cut-off times point for effective for reperfusion treatment interventions (GISSI, 1986; ACC/AHA Task force practice guideline, 2004). Therefore, delay time to seek treatment in this study was defined as the delayer who had the time from symptom onset to hospital arrived at emergency department equal and more than 2 hours interpreted patients with AMI symptom had delay to seek treatment for treatment

Definitions of terms

Delay to Seek Treatment defines as the range of time in hour and minutes from patient's recognition of the onset of signs and symptoms with action until arrived at hospital. A time equal or more than 2 hours was used to determine the delay to seek treatment in relation to the disadvantage of total ischemic time for treatment initiation benefit (GISSI, 1986; ACC/AHA, 2004; Steg et al, 2003; Smalling, 2009). Data on delay to seek treatment was collected before 72 hour after AMI symptom onset. Time first notice symptoms was ascertained by subjects' identification with a recollection of the time of symptom episode. The hospital arrival time obtained through a review of the patients' medical records.

Severity of Symptom is defined as a degree of individual perceives pain intensity after first noticed with symptom onset. Answers to this question patient's self report with rate the numeric rating scale (NRS) for assessment of pain intensity with numbers from 0 to 10 ('no pain' to 'worst pain imaginable')

Cognitive and emotional illness representations are defined as patients' beliefs regarding their illness, as derived from his or her two parallel processing systems. They are comprised of two related branches.

First, cognitive illness representations are comprised of the following five constructs: 1.1 identity (the nature of AMI symptoms associate with AMI);

1.2 caused (patients' ideas or belief about the likely cause of symptom from cardiac in origin.

1.3 Time-line (patients' expectations about duration of illness with AMI symptom, its characterize cause, and the perceptions whether illness will acute or chronic)

1.4 Consequences: (patients' ideas or belief about the illness severity and likely impact on their physical, social, and psychological functioning, including both the short-term and long-term effect of presenting AMI symptom (sudden death, Heart failure), and the consequence from social influence (trouble other people).

1.5 Cure/controllability: (patient's believes condition is amenable to cure or control over the symptoms).

The cognitive representation will be measure by 9 items from the Response to Symptom Questionnaire-Modified -cognitive domain, the higher score indicate that patients' have more attribute symptom to the heart related.

Emotional response to symptom is defined as an external expression of emotion associated with symptom reflect by patients' believed to be evoked by actual symptom, and by the affective prospect of experiencing sign and symptoms in specific situation and will be measured by the Response to Symptoms (RSQ)

questionnaire-Modified. This item includes 2 emotional responses to AMI symptoms include, patient's anxious or upset and embarrassment to seek treatment. The higher score reveal that AMI patients have high level of anxiety.

Alternative coping strategies is defined the behavioral responses that are executed in response to one's illness representation in an attempt to resolve symptoms and/or to maintain a sense of psychological control. They may include active or direct problem-focused coping strategies directed toward managing or changing the symptoms (e.g., self-treatment attempts, seeking medical information or treatment) and include emotion-focused coping strategies approaches designed to regulate the emotional consequences of stress, such as distraction, ignoring symptoms, and attempt to redefine the problem. Alternative coping strategies refer to coping strategies that patients with AMI symptoms execute prior to seeking treatment for the symptoms (i.e., they are alternatives to seeking treatment). In this study reflect by 15 items of the Coping with Heart Attack Symptom Questionnaire (CHASS) were included problem-focused coping and emotional-focused coping, the high score indicated that patients have more frequently of alternative coping plan for action

Appraisal of symptom seriousness is defined the degree in which patients estimation of the symptom of AMI comparing with pre-conceivenotion and the past experience for more important to rapid response will be measure by the single item (emotional or affective response to symptoms from the RSQ questionnaire-Modified) was used "When you first notice your symptoms, how serious did you think they were?" Responses to this item are a 5-point Likert-scale and included, not at all,

mildly, moderately, very and extremely, with 1 (not at all) and 5 (extremely). The higher the score, the more serious is the appraisal of symptoms.

Expected usefulness of the study

1. This study provides a basic knowledge base to understand, explain and predict the phenomena of delay in seeking treatment in Thai AMI patients.

2. The research contributes to the body of knowledge concerning the SRM. The findings support the validity of the SRM, and explain the causal relationship of the relevant aspects of the theory in the phenomena of delay in seeking treatment in Thai AMI patients.

3. This study propos a middle range theory of delay in seeking treatment in Thai AMI patients. It provides a data base about the causal relationships among the selected variables. It is crucial to help nurse and health care providers to understand both the direct and indirect effects of predictive factors on delay in seeking treatment in Thai AMI patient.

4. The findings provide a scientifically-based guideline for health care providers, multidisciplinary teams and policy makers to provide suitable support and guidance to reduced delay in seeking treatment in Thai AMI patients.

5. Nurses will able to be use this findings to develop research and nursing interventions to help AMI patients to reduce delay time to seek treatment that direct to improve their health outcome and decrease the mortality rate of Thai AMI patients

Limitations

The limitations of the current study are as follows:

1. The measurement of delay time to seek treatment was based on recalled memory under the sudden event; it may be not to exactly accuracy time.

2. All of the developed measurements are based on the western culture and translated from English into Thai. The incongruence of the measurement with the Thai culture may occur though the back translation method is strictly followed and cross-cultural equivalence is taken into consideration.

3. The findings of this study can be interpreted only for AMI patients who are survive for seek treatment, however, statistic showed that nearly haft of all sudden AMI event who were died before admission.

4. The cross-sectional design is applied to collect data at only one point of time. Hence, the causality of independent variables and dependent variables in the model in different time might be inconclusive results.

CHAPTER II

LITERATURE REVIEW

The present study is aimed at examining the model of causal relationship as it relates to 6 factors associated with delay in seeking treatment among Thai AMI patients. A critical review of the existing literature includes theoretical theory and empirical studies. The review was divided into seven parts as follows.

1. Phenomena of AMI patients and impact of time in seeking treatment
2. Definition of delay to seek treatment
3. Phases of delay to seek treatment
4. The Significance of delay in seeking treatment in AMI patients
5. Theories used for explained delay in seeking treatment in AMI patients.
6. Study variables influenced delay in seeking treatment in AMI patients.
7. Factors influenced delay in seeking treatment in AMI patients

Phenomena of AMI patients and impact of time in seeking treatment

In Thailand, Coronary Heart Disease (CHD) is the 3rd leading cause of death for both men and women in Thailand (Ministry of Public Health, 2004). Acute myocardial infarction (AMI) accounts for a large proportion of CHD death. According to the Ministry of Public Health (2004) reported mortality rate of CHD was 26.8 per 100,000 populations with an estimation of about every hour someone will die from CHD.

Death from AMI often occurs within the first 1 to 2 hours after the symptom onset most often due to fatal dysrhythmias and/or cardiogenic shock (TACSR, 2007) – resulting in an increase in medical expenditure and economic costs in Thai society. Survival from Ventricular Fibrillation (VF) is inversely related to the time interval between its onset and termination. For each minute that a patient remains in VF, the odds of survival decrease by 7% to 10% (Cummins, Ornato, Thies, and Pepe, 1991).

The reduction in mortality can be achieved with reperfusion therapy but also depend on the elapsing time between the onset of symptoms and treatment initiation (AHA, 2007). Treatment is readily available for reducing infracts size and myocardial ischemia, but treatment needs to be initiated within the first few hours after onset of symptoms (FTT Group, 1994). Previous studies indicated that reperfusion therapy for an AMI can minimize myocardial damage with positive effects on mortality when administrated within 3 hours from the onset of AMI symptoms (Lundergan, Reiner, and Ross, 2002; Ting, Yang, and Charanjit, 2006). The value of reperfusion therapy depends not only on the time saved of door-to-door needle time but also on when it occurs. Available data suggested that time save within the first 1 to 2 hours had greater biological importance than time saved during the later stages of AMI (FTT Group, 1994; GISSI, 1986). Turi el al., (1986) reported the trial between 2 groups of early and late arrived at hospital. A significantly higher mortality rate was observed in patients who arrived late for more than 2 hours after the onset of chest pain, even in those who received hemodynamic compromise (bradycardia, hypotension). Long-term mortality rate after reperfusion therapy were suggested in those who arrived early, within 2 hours of onset of chest pain, as compared to those who arrive late.

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. The taskforce guideline for management AMI from ACC/AHA (2004) recommends: 1) AMI patient rapidly contact paramedics and/or seek help from healthcare system (typically, arrival at the Emergency department) to initiate fibrinolytic therapy for less than 30 minutes; 2) In case of AMI patient self-transport to emergency department, alternative chosen of Primary Coronary Intervention to balloon inflation should be started within less than 90 minutes. (Antman et al, 2004). Figure 2.1 depicted taskforce guideline for management AMI.

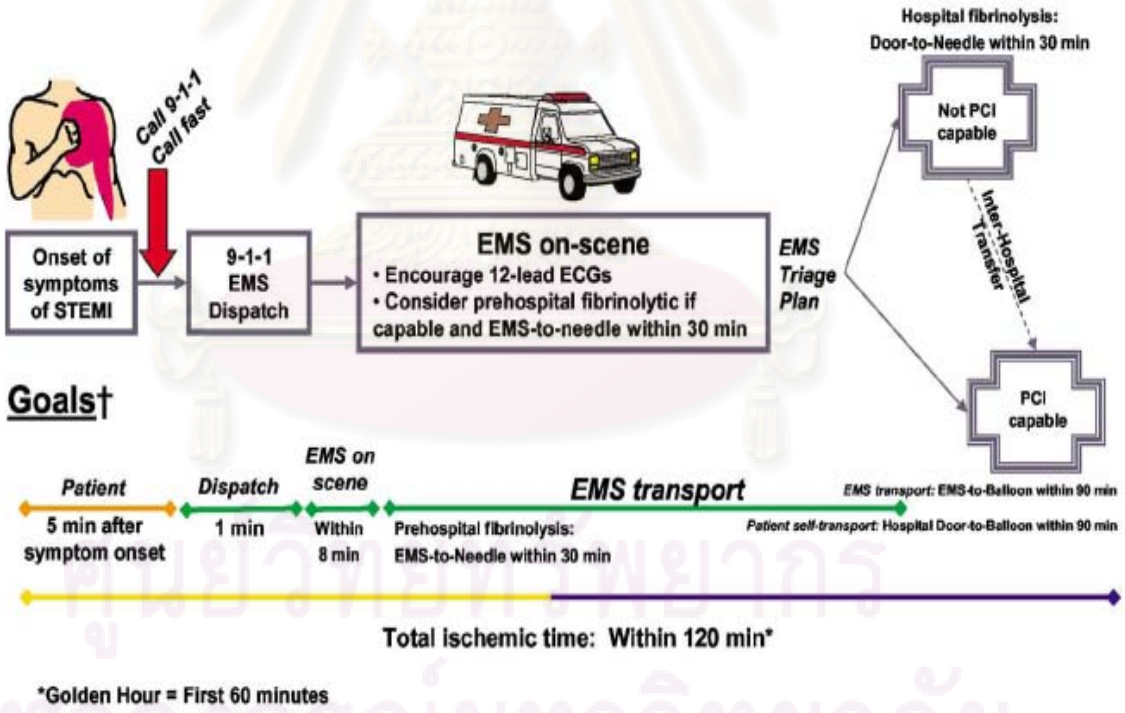


Figure 2.1 The taskforce guideline for management AMI from ACC/AHA (2004)

Definition of delay to seek treatment in AMI patient

Acute myocardial infarction (AMI) is the prototype of a real emergency, and both efficacy and speed are necessary for effective management. Operational definitions of outcome variables have a significant impact on the validity and generalizability of research findings. Dichotomization of continuous variables represents one situation in which generalizability, comparability, and synthesis of findings across studies can be compromised. This is because difference authors may selected varying criteria to determine the cut-off point at which subjects are classifies as having or not having the outcome of interest.

Given that effectiveness of reperfusion therapies used in the treatment of AMI is time-dependent, many researchers have investigated the phenomenon of delay in seeking treatment for AMI. However, review of the literature suggests that investigators (Burnett et al., 1995; Hanucharurnkul el al., 1998; McKinley et al., 2004; Ottesen et al., 2004; Sheifer et al., 2000; Cheng et al., 2007; and Khraim et al., 2009) (Table 2.1) have used a wide variety of approaches to operationalizing delay time. The term of delay in seeking treatment had been inconsistency defined based on the two research aspects: 1) the time from symptom onset to hospital presentation and 2) the total ischemic time of treatment initiation benefit.

Two aspects of definition on delay in seeking treatment were as follows.

1) The time from symptom onset to hospital presentation,

When used as the time from onset of symptom to hospital presentation as a continuous variable, delay among AMI patients tends to have severe positive skew due to a common tendency for a small proportion of patients to delay seeking medical attention for a relatively long period (i.e., day vs. hours). One approach to the

management of skewed data is mathematical transformation. However, mathematical transformation produced scored that can be difficult to interpret because they no longer carry the init of analysis of the original data. For example, in our data set, the base log of delay time of 0.5 hours was -.30, which is clearly difficult to explain and/or compare in terms of actual/exact time. In addition, mathematical transformation procedures may sometimes fail to produce a normal distribution when the departure from normality is severe (Tabachnick and Fidell, 2001). For example the study by Dracup et al., (1997) the resulted of delay time was to take a logarithmatic transformation to obtain data to a normal distribution for delay time and the transformed valued were used in all analyses, but back to original when test with logistic regression and chi-square statistic to assess odds rations.

The next reason of inconsistency of term is the investigators determine delay time as the time from the onset of symptoms occurs to patients decision to seek medical attention (Hanucharurnkul el al., 1998; Ottesen et al., 2004; Dracup et al., 1997; Dracup et al., 2003; Khraim et al., 2009) or delay time means as time from the onset of symptom to hospital arrival at emergency room (Mckinlay et al., 2004; TACSR, 2007; Bleeker, 1995; Dracup et al., 1997; Goldberg et al., 2002). These showed that generalizabilty to compare were difficult.

2) The total ischemic time of treatment initiation benefit.

In this mean, investigators chose to operationalize the delay in seeking treatment, on the time influence the treatment initiation benefit. The cut-off times were such as 1, 2, 3, 6 and 12 hours, median delay of AMI treatment-seeking. Example of past researcher operational definitions were wildly among studies, such as

1 hour (Dracup et al., 1997; Dracup et al., 2003; Al-Hasson and Orman, 2005; Carney, Fizsimons, and Demster, 2002; Goldberg, , Gurwitz, and Gore,1999), 2 hours (Demsey; Dracup, and Moser, 1995; Turi et al., 1986; Cheng et al., 2007; ACC/AHA Taskforce Practice Guideline, 2004), 3 hour (King and McGurie, 1994), 6 hour (Schmidt and Bocsh, 1990; Changchaywong, 2000) and 12 hours (Ruston, Clayton, and Calnan, 1998). Use of different cut-off times for the definition of delay time led to the variability of the explained variance, sensitivity, specificity, and predictive values associated with each regression model. More importantly, cut-off times on the definition of delay time did effect the survival and mortality of AMI patients as it related to ischemic time. The classic trial study from GISSI (1986) (Figure 2.2) showed the reduction mortality when administered reperfusion therapy within 1 hour of the onset of symptom by 50% and within 3 hours by 23%. Therefore, GISSI (1986) recommended treatment initiation within 2 hour after onset of symptom. Steg et al., (2003) also confirmed this recommendation. AMI patients treated with fibrinolysis followed by PCI within 2 hours of onset of symptoms, the 30-day mortality was reduced from 5.2% to 2.2% compare with primary PCI. Taskforce Guidelines for management AMI from ACC/AHA (2004) and Smalling (2009) also indicated the critical importance of ischemic time within 2 hours for management of AMI patients in a new gold standard for AMI care.

Based on these two major reasons, clinicians and researchers recommended that criteria be established with regard to operationally defining AMI seeking delay. According to this present study, attention is to described the delay phenomenon in seeking treatment among AMI patients within delayer group, a patients presentation at hospital after 2 hours after symptom on-set, as they are the disadvantage group to

significant poorer health outcome indicators. Knowledge of factors associated with delay in seeking treatment for these prolong ischemic group would provide specific explanation on “Why these patients delay to response to AMI symptom and delay to seek treatment?” The knowledge may offer nursing modality for increasing early presenters for myocardial salvage thus reduce prolong ischemic patients.

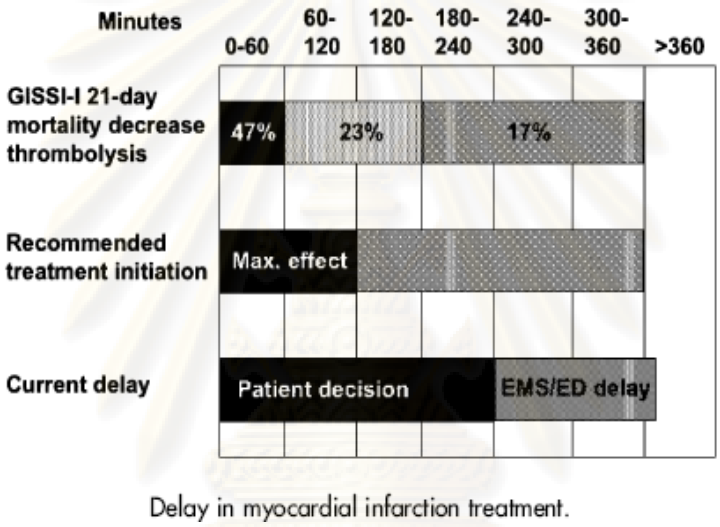


Figure 2.2 The resulted of Gruppo Italiano Per Studio Della Streptochinasi Nell’Infarcto Miocardico (GISSI). (1986)

Summarized the past research definition used for time to seek treatment are detailed in table 2.1

Table 2.1 The summarization of the inconsistent definition of time to seek treatment

Author (year)	Independent Variable Definition	Reported resulted
Burnett et al., (1995)	Decision time was defined as the length of the interval between the onset of symptoms and the request for medical assistance	- Distinguish early responders (i.e., requested medical assistance < 60 minutes after the onset of acute myocardial infarction (AM1) symptoms) from late responders (i.e., request made ≥ 60 minutes after symptom onset
Hanucharurnkul el al., (1998) **Thailand**	- Delay in seeking treatment - Definition not state	1) Median time from symptom onset to decision to seek treatment (patients phase) 2) median time of transportation phase 3) median time of prehospital phase (1+2) 4) total time from ER to CCU 5) total time from symptom onset to treatment at ER 6) total time from symptom onset to receive treatment at CCU
Mckinley et al., (2004)	- Delay in presentation for AMI treatment within 1 hour (the golden hour) 1) Non-Delayer defined as the time from symptom onset to hospital admission < 1 hour. 2) Delayer was the time from symptom onset to hospital admission > 1 hour.	- Median time from symptom onset to hospital admission - Comparing patients who presented to hospital in 1 hour or less and more than were non-delay and delay
Sheifer et al., (2000)	Time to presentation with AMI -Defined as time from onset of symptom to arrive at hospital.	- median time from onset of symptom to arrived at hospital divided to < 6 Hr, 6-12 Hr, and > 12 Hr.
Cheng et al., (2007)	- Prehospital delay for AMI - Non-Delayer defined as the time from symptom onset to hospital admission < 2 hour. -Delayer was the time from symptom onset to hospital admission > 2 hour.	- median time from onset to hospital arrival categorized to group less than 2 hour and equal and more than 2 hour

Author (year)	Independent Variable Definition	Reported resulted
Ottesen et al., (2004)	Prehospital Delay in ACS 1) Prehospital delay time defined as the time from symptom onset until hospital presentation 2) decision delay the time from onset of symptom until seeking medical attention 3) physical delay is the time from seeking medical attention by involving the local EMS until arrival at ER. 4) transportation delay is the time from arrival of the patients until hospital presentation	- Delay interval - factors correlated with 4 type of delay - median prehospital delay time, decision delay, physical delay time, transportation delay time
Khraim et al., (2009)	- Delay to seeking health care 1) Prehospital delay defined as the time a patient take after the initial onset of AMI symptoms to arriving at the hospital 2) In-hospital delay is the time from arriving to the hospital to initiation of treatment 3) Decision delay time is the time from onset of symptom to making the initial decision to seek professional heath care 4) Transportation delay is the time from making the decision to seek professional health care to hospital arrival.	-Median decision delay time was reported. - variable corresponded predicted decision delay were age, waiting for symptoms to go away, anxiety, and other response to patients symptoms

This study used definition of delay time to seek treatment based on the aspect of ischemic time for maximum of treatment initiation benefit by using the critical cut-off times point for effective for reperfusion treatment interventions (GISSI, 1986; ACC/AHA Taskforce Practice Guideline, 2004). Therefore, delay time to seek treatment in this study was defined as the delayer who had the time from symptom onset to hospital arrived at emergency department equal and more than 2 hours interpreted patients with AMI symptom had delay to seek treatment for treatment.

Phases of delay to seek treatment

Phases of delay to seek the treatment were divided into 3 phases

1) The patient/by stander recognition and action phase: This phase begins with the onset of symptoms until the patients or bystander decides to call 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 MI, starting from patients' perception of some irregularity of the symptoms.

The onset of symptoms is a time of an acute symptoms occurrence which arouses the patient to decide to seek treatment. The initial symptoms occurred mostly prior to onset of symptoms. Interview data's of hundreds of AMI patients revealed that the most patients could identify the onset time, but one of 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, and Stanford, 2002). Another way which helped reducing the time delay is quick decision to go the hospital or to call for an emergency medical service. The behavior which may increase 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 (Meischeke et al., 1995). Besides, seeking consultation from expertise 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, and Goldstein, 1991). This phase is very critical since it is the process under the control of the patients themselves. An appropriate strategy to minimize delay should focus on promoting the current perception of symptoms, and appropriate response to symptoms of AMI.

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 personal, 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.

3) Hospital action phase: This phase begins as soon as the patients arrives at the hospital and ends with receiving a definitive therapy. Health care personal 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.

Most of studies focused on a combination of phase 1 and 2, i.e.; begin 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 phases of: r = .87. The medium 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 at hospital are 6 to 29 hours, with median of 2 to 6.4 hours (Dracup and Moser, 1991; GUSTO Investigators, 1993; Goldberg et al., 1999). Futuremore, studies also conducted in various countries with different social and cultural characteristics on comparing the total pre-hospital time 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).

The GRACE project provides useful data comparing pre-hospital times amongst a large group of patients with AMI (Goldberg et al., 2002). Eighteen countries participated in the GRACE project, collecting demographic and detailed clinical data on patients hospitalized with AMI. Data from 10,582 patients was used to explore the extent of, and factors associated with, delay to hospital presentation. This sample included 3693 patients with ST elevation MI; 2,935 with NSTEMI and 3954 with unstable angina. Delay time was defined as the time interval between the onset of symptoms suggestive of AMI and arrival in the Emergency Department (ED). Average delay times were highest in patients with Non ST-segment elevation MI (NSTEMI) (mean 6.1 hours, median 3.0 hours) followed by patients with unstable

angina (mean 5.6 hours, median 3.0 hours) and were shortest in those with ST-segment elevation MI (STEMI) (mean 4.7, median 2.3 hours). A significant proportion (23% – 32%) of all patient groups arrived in the emergency department more than 6 hours after symptom onset. These data confirm that prolonged times from symptom onset to hospital arrival remain an issue for patients with MI and are also associated with the other AMI, possibly to an even greater degree.

According to early Thai studies found that, from the National multicenter study included all part of Thailand in Thai Acute Coronary Syndrome Registry project reported from 9,060 ACS patients, show the decision time of Thai ACS patients were 3 hours 18 min (TACSR, 2007), consistent with prior study 3 hours 48 minutes (Boonyapatkul, 2000), 3 hour 40 minutes (Hanucharurnkul et al., 1998), total time were exceed 7 hours 25 min (Aium-sirinukul, 1997), respectively.

In summary, AMI is common and potentially life-threatening. Interventions are most effective when administered for myocardial savage in earlier. However, there is substantial evidence that delays occur between the onset of symptom and receipt of treatment and thus this period of delay is an important focus for research.

The Significance of delay in seeking treatment in AMI patients

The advantage of thrombolysis therapy has transformed the care of these patients. In fact, the most frequent complication of AMI is sudden death which still occurs within the first hour after symptom onset. Thrombolytic therapy has been shown to reduce early and long term mortality about 20%. The mortality gain is dependent on the delay time of early reperfusion. A large number of studies have shown that this relationship is best described as exponential: in the first 1 to 2 hours after the onset of chest pain, the benefit of thrombolysis is greater. Reducing the time to thrombolysis must therefore be the main objective of prehospital treatment of AMI. In the last 10 years, a large number of strategies to reduce the time to reperfusion have been evaluated. During the last ten years to fifteen years the field of reperfusion during acute myocardial infarction was a real battlefield between the proponents of thrombolysis and those of primary percutaneous interventions. Nowadays there are a growing number of physicians who will consider that the best way forward is not to oppose these two effective methods but to find the most appropriate niche for each or even better to combine them to achieve reperfusion. In this respect, the concept of facilitated percutaneous intervention (PCI) is a very attractive one which shows promising results. A large number of studies are now ongoing to demonstrate its efficacy and to help us to choosing the ideal combination of anti-thrombotic agents to be used. That is one of the main interests of the CAPTIM study. French trial comparing prehospital thrombolysis to primary angioplasty the resulted showed that the fact than 33% of the patients had a pre hospital thrombolysis followed by a fast angioplasty. The results are impressing: the 30 day mortality in the pre hospital

thrombolysis arm is only 3.8%. But if the delay between pain to pre hospital thrombolysis is under 2 hours this 30 day mortality fall down to 2.2% (Goldstein and Wiei, 2005). The value of reducing delay until treatment depends on the amount of time saved. Available data suggest that time saved within the first 1 to 2 hours has greater biological importance than time saved during the later stages of STEMI (FTT Collaborative Group, 1994; GISSI, 1986).

Time is of the essence in the setting of AMI patients. More than 40% of individuals experiencing heart attacks will die from them, and 20% will die without hospitalization. Most deaths result from fatal arrhythmias and/or cardiogenic shock. Thus, early access to hospital care can provide treatment for potentially fatal arrhythmias and consequently, save patient's life.

More importantly, shortening the time from symptom onset to treatment is associated with lower mortality rate (GUSTO Investigators, 1993; FTT Collaborative Group, 1994). A recent metaanalysis of 22 randomized trials of thrombolysis (n = 50,246) reported that the greatest reduction in mortality was seen in patients who presented to a hospital within the first hour of symptom onset (Boresma, Mass, Decker, and Simoons, 1996). This benefit was estimated at 65 (SD 12) lives saves per 1,000 (95% CI: 38, -93) treated patients. The benefit of treatment was still seen between 6 to 12 hours after onset of symptoms, with 18 (SD 6) lives saved per 1,000 (95% CI: 7, -29) treated patients. The association between delay time and mortality was non-linear. Namely, patients who presented within the first-two hours after of symptom showed a steeper reduction in mortality than those who presented two hours later.

The American Heart Association (AHA) are working to reduce the time-to-treatment for AMI through cooperative educational efforts designed to achieve the goals of Healthy People 2010, the federal government's blueprint for building a healthier nation. Healthy People 2010 include 4 objectives that specifically address improving the awareness of heart attack symptoms, action time to treat potential heart attack patients, and access to emergency medical care. Both organizations are calling on physicians and other healthcare providers to engage their patients in potentially lifesaving discussions about heart attack warning signs and the need to call 9-1-1 immediately when such symptoms occur. The discussion of STEMI and Non-STEMI were describes as follows:

Early management of STEMI

STEMI is associated with a very high mortality rate. The Multinational Monitoring of Trends and Determinants in Cardiovascular Disease [MONICA] project found that approximately a third of all cases are fatal before hospitalization, most of these within an hour of symptom onset (Chambless et al., 1997). The project was a large epidemiological study conducted on behalf of the World Health Organization to monitor trends in CHD over 10 years across 37 populations in 21 countries. Median 28-day mortality rates of 49% for men and 51% for women were documented. Importantly, two-thirds of these deaths (most due to cardiac arrest) occurred before reaching hospital. Survival following cardiac arrest is more likely if the event occurs in the presence of paramedical staff equipped with defibrillators (Norris, 1998).

Furthermore, a number of medical interventions, particularly thrombolysis (Fibrinolytic Therapy Trialists' [FTT] Collaborative Group, 1994; GISSI, 1986) and percutaneous transluminal coronary angioplasty (PTCA) (Zijlstra et al., 1999; De Luca et al., 2004) have been demonstrated as effective in reducing mortality. However the benefits of such reperfusion treatments are dependent upon prompt administration (Boersma et al., 1996). Greatest benefit is achieved if treatment is administered within an hour of the onset of symptoms. With each minute that passes benefit is reduced, until ultimately a time point is reached where the risks associated with treatment are judged to outweigh any likely benefit. Thrombolysis is usually not given where the onset of symptoms occurred more than 12 hours previously (Van de Werf et al., 2003).

In 1996, Boersma and colleagues conducted a meta-analysis of 22 trials of thrombolytic therapy with data from a total of 50,246 patients being included. They estimated that treatment with thrombolysis saved 65 lives per thousand treated if given within 1 hour of the onset of symptoms; 37 lives per thousand if given 1-2 hours after the onset of symptoms; reducing to 26 and 29 lives per thousand if given 2-3 hours and 3-6 hours, respectively after the onset of symptoms. They found evidence of benefit until at least 12 hours after the onset of symptoms, although this was of significantly lower magnitude. They found insufficient evidence to assess benefit after this time point. This meta-analysis was well-conducted and included data from over 50,000 patients. Additionally, recent authors have suggested that, due to an issue relating to how times were measured in certain trials included within the meta-analysis, results from this analysis might even underestimate the favorable effects of early thrombolysis (Terkelsen et al., 2003).

In summary, there are compelling reasons why patients who are experiencing AMI should come under the treatment maximum benefits of appropriately equipped medical or Emergency Medical Staff as soon as possible: Firstly, to allow the prompt identification and treatment of arrhythmias including cardiac arrest and secondly, to facilitate the early administration of beneficial treatments such as thrombolysis or PTCA.

Non-ST elevation Myocardial Infarction (NSTEMI)

Patients with NSTEMI are at a lower, but still significant, risk of death. The large, multinational, observational Global Registry of Acute Coronary Events (GRACE) has been used to derive regression models to predict death from an unbiased population of patients with AMI. Data were collected from 26,267 patients with the full spectrum of AMI. A 30-day mortality rate of 3% was documented for patients with UA, almost 6% for patients with NSTEMI and 9% for patients with ST elevation MI (Fox et al., 2006).

However, data also demonstrate that risks for individual patients are not equal. Patients with high risk features such as pulmonary edema or ongoing rest pain are at higher risk of death and MI (Braunwald et al., 2002). Methods for stratifying patients into high, intermediate and low risk categories and tailoring their management accordingly have been proposed in recent practice guidelines jointly published by the American College of Cardiology and the American Heart Association (Braunwald et al., 2002).

These guidelines suggest that all except the lowest risk group (who comprise approx 6% of patients with UA or NSTEMI) require urgent hospital care.

A number of treatments including aspirin (Antiplatelet Trialists' Collaboration, 1994), other anti-platelet drugs (Balsano et al., 1990; Yusuf et al., 2001) and anti-thrombin treatments (Eikelboom et al., 2000; Direct Thrombin Inhibitor Trialists' Collaborative Group, 2002) have been shown to be effective in reducing the risk of death and myocardial infarction in this group of patients. Thus prompt medical assessment is warranted for all patients with symptoms suggestive of an AMI, to identify both those with AMI and those with other AMI, associated with high risk features, requiring hospital treatment medication.

Time from the onset of symptoms to initiation of treatment

Despite the clear benefits of prompt treatment, studies have consistently demonstrated that the time between the onset of symptoms and hospital treatment (pre-hospital time) is longer than optimal for many patients with AMI. Table 2.2, below contains a summary of studies where delay in seeking treatment time has been investigated amongst patients with AMI. Reports of median pre-hospital time vary between 30 minutes (Bleeker et al., 1995) and 474 minutes (Canto et al., 2000). Direct comparisons between studies are difficult due to important differences in methodology which are likely to influence the results obtained.

Firstly, there are differences in the population being studied. Some studies have been conducted amongst participants in randomized controlled trials (RCTs) of thrombolytic drugs (GISSI, 1995; Gibler et al., 2002), a group that is likely to represent highly selected sample of the overall population of patients with AMI. Some investigators have selected patients on the basis of age, either excluding those aged >75 years (Bleeker et al., 1995) or only studying those aged >65 years (Sheifer et al.,

2000). Others report less restrictive inclusion criteria (Horne et al., 2000; O'Carroll et al., 2001; Goldberg et al., 2002).

Table 2.2 Summary of studies examining delay in seeking treatment in AMI patients

Author (year)	n	country	Data source	Median Time symptom onset-hospital presentation (Hour)	Note
Bleeker, J et al., (1995)	300	Netherlands	Patient interview	30 mins	
GISSI group, (1995)	5,301	Italy	Patient interview	3 Hr 50 mins	
Dracup et al., (1997)	317	Australia	Patient interview	6 Hr 24 mins	
Rawles, J et al (1998)	1,046	UK	Medical records	45 mins	GP
			Medical records	2 Hr 30 mins	Hospital
Goldberg, et al., (2000)	3837	USA	Medical records	2 Hr 12mins	1986
			Medical records	2 Hr	1997
Canto et al., (2000)	44,877	USA	Registry	7 hr 54 mins	no pain
			Registry	5 Hr 18 mins	chest pain
Gibler, et al., (2002)	27,849	USA	Thrombolytic trial	1 Hr 24 mins	GUSTO I
			Thrombolytic trial	1 Hr 24 mins	GUSTO II
Goldberg, et al., (2002)	3,693	International	Registry	2 Hr 18 mins	
Dracup et al., (2003)	192	USA	Patient interview	3 Hr 18 mins	
	127	S. Korea	Patient interview	4 Hr 24 mins	
	136	Japan	Patient interview	4 Hr 30 mins	
	141	England	Patient interview	2 Hr 30 mins	
	317	Australia	Patient interview	6 Hr 24 mins	
Hanucharurnkul el al., (1998)	177	Thailand	Patient interview	3 Hr 40 mins	
TACSR, 2007	9,060	Thialand	Patient interview Registry	4 Hour	TACSR

Secondly, studies have differed with regards to the method of data collection. Some have abstracted data from medical notes or patient registries whilst others have used patient interviews. Previous work in relation to delay in seeking treatment time has demonstrated that data obtained by interview can differ significantly from that

recorded within medical notes with people tending to report longer pre-hospital times during interview than those recorded in their medical notes (Goldberg et al., 2002).

Finally, there are differences in how delay in seeking treatment time was defined. For example, whether the onset of prodromal symptoms is included in the definition of the onset of symptoms is likely to affect calculations of delay in seeking treatment time.

Interventions aimed at reducing delay in seeking treatment have met with little success. Two RCTs, including the large scale Rapid Early Action for Coronary Treatment [REACT] trial, reported no statistical effect of the intervention (Meischke et al., 1997; Luepker et al., 2000). A systematic review of interventions to reduce delay in patients with suspected heart attack identified one controlled trial and three 'before and after' studies which specifically examined patient delay (Kainth et al., 2004). A pre- and post measure studied reported that a significant reduction in median delay during 12 month multimedia public campaign (180 minutes. vs. 155minutes, $p<.001$) (Gaspoz et al., 1996). The multi-media campaign was intensive and data regarding the long term effect of the campaign could not be identified within the literature.

However, the other pre- and post measure studied reported no differences in delay (Ho et al., 1989; Bett et al., 1993). The controlled trial reported an increase in the percentage of patients in the intervention group calling their GP after the intervention (compared with before) but this was not compared with the control group (Rowley et al., 1982). The content of interventions has varied but most include information about the importance of prompt action when symptoms occur. Given the substantial complexities involved in recognizing and attending to symptoms,

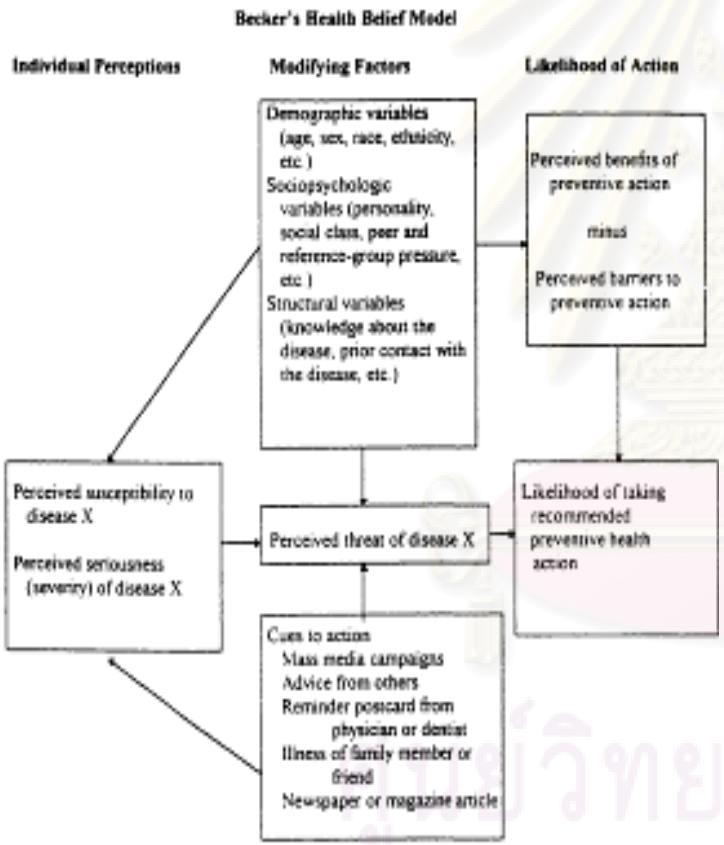
identifying the likely cause and identifying the appropriate avenue for healthcare such messages may be over-simplistic.

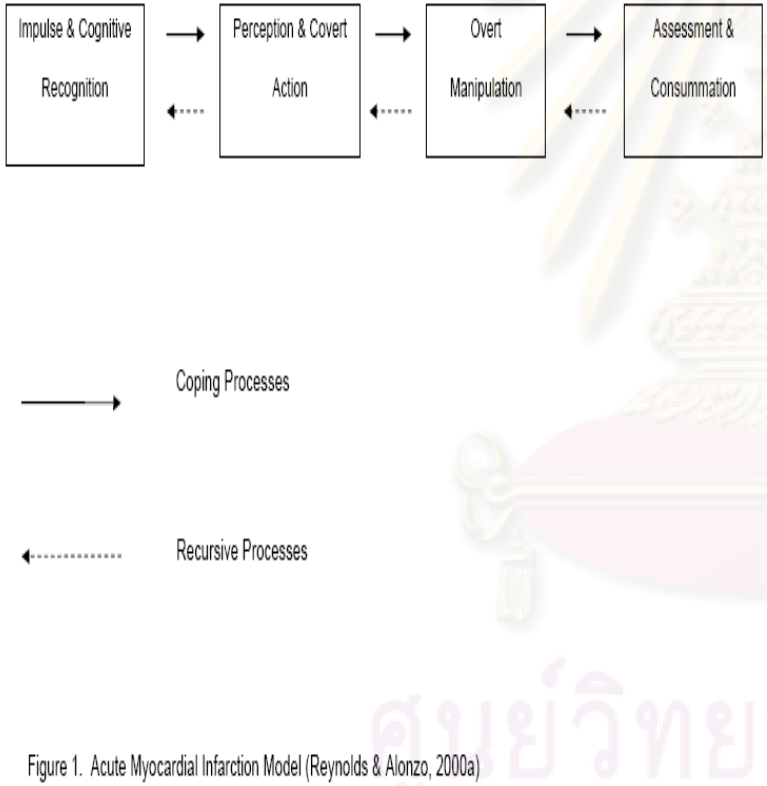
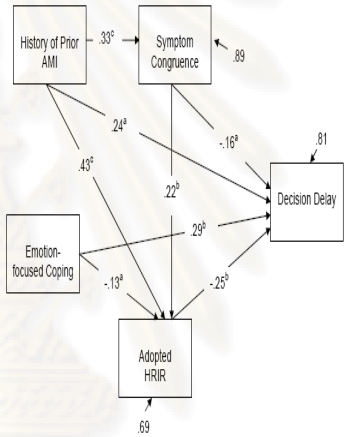
Theories used to explain delay in seeking treatment in AMI patients

By using a theoretical approach is important step to verified phenomena of delay in seeking treatment in AMI patients to promote greater understanding of how a variety of factors interrelate in a larger context, and could provide health professionals with more guidance with respect to developing intervention to reduce behaviors contribute to delay in seeking treatment for AMI patients.

Most of the previous research in the area of delay in seeking treatment among AMI patients has been atheoretical approach. Thus, research were focused on perceive, evaluate, and act upon symptom. It limit to a draw picture of the whole phenomena of AMI patients delay in seeking treatment. A number of theories have been put forth as having the potential to explore AMI delay, detail as depicted in table 2.3 as follow:

Table 2.3 Summary of Theory application to AMI population

Original Theory	Theory Application to AMI population	Aim & Usage	Limitation
Health Belief Model	 **Figure** Becker's Health Belief Model	Sue Krol, (1999)Delay in the behavior of health seeking activity for individual with symptoms of acute myocardial infarction: is there a gender difference On this dissertation was Aim of this study to determine the relationship and predicted of selected variables and sociodemorgraphic factors to the pre-hospital delay interval . major focused on gender differences.	The conceptual model used for this study removed the patients perception factors that were used in other frameworks. This information was not available on this retrospective design. The conceptual framework used for this study well for the information that was available. The addition of patients perceptions and actions would provide valuable data but should be collected in a concurrent study in stead of retrospective

Original Theory	Theory Application to AMI population	Aim & Usage	Limitation
Reynolds & Alonzo's (2000a) AMI Coping Model	 Figure 1. Acute Myocardial Infarction Model (Reynolds & Alonzo, 2000a)	 Fox-Wasylyshyn (2005). Delay in seeking treatment for AMI. urposes of this study were to: (a) identify the factors that impact care seeking delay among patients experiencing acute myocardial infarction (AMI) within the context of a theorytesting approach, and (b) examine the interrelationships among variables that influence delay	- A limitation pertains to the observational, cross-sectional nature of the study design. The AMI decision-making process is conceptualized as a decision-making process in which non-recursive relationships may exist among the variables secondary to changes in symptoms, self-treatment strategies, and thought processes. However, the cross-sectional nature of this study prohibits the ability to capture the dynamic changes that might have occurred among the study participants during their decision-making processes.

Considering the theoretical application, aim/usages, and the limitation, this study used the self-Regulatory Model of illness Behavior (Leventhal' SRM) was selected as the theoretical framework for this study for the following reasons:

1. The theory provided a plausible explanation for the patterns of behavior observed in previous studies. The link between symptoms and delay in seeking treatment was made but not assumed to be inevitable.

2. The model conceptualizes individuals as rational, problem-solving individuals but does not exclude the influence of other social factors. The role of emotion in affecting health behavior is acknowledged, an area neglected by other social cognition models (Fishbein and Azjen, 1974; Becker, 1974).

3. A large body of evidence exists to support the illness representation dimensions and their relationships with coping behaviors and clinical outcomes (Hagger and Orbell, 2003).

4. The framework had been used successfully with people with AMI and found to be predictive of outcome (Petrie et al., 1996). The model was found to explain variance in delay in seeking treatment time additional to that explained by demographic and clinical factors, amongst patients with AMI, (Walsh et al., 2004).

5. The Response to Symptoms Questionnaire (RSQ) was a tool which could easily be adapted for Thai AMI patient will use to with patients with possible symptoms of AMI (Burnett et al., 1995).

The SRM posits that individuals actively develop representations of illness based upon (1) a general pool of knowledge of illness current in culture, (2) social communication with individuals such as health professionals or family and

(3) personal experience of illness. It is hypothesized that a change in somatic activity, such as a symptom, stimulates a self-regulatory process whereby individuals integrate such preexisting ideas about illness with current bodily experiences. The processing system can be viewed as consisting of 2 parallel pathways. One involves the creation of a cognitive representation or 'mental picture' of a health threat and the development of a coping plan. The other pathway involves the creation of an emotional representation of the health threat and an associated plan for coping with the emotional response. The 2 pathways are proposed to interact, as the threat develops, via feedback loops and appraisal of coping strategies. Therefore, failure of coping mechanisms to control emotion may result in a change in the cognitive representation (e.g. intensify or diminish symptoms). Similarly, failure of coping mechanisms to ameliorate symptoms may result in alteration to emotional representations e.g. causing distress (Leventhal et al., 1984).

An organizing theoretical framework that may provide better understanding of delay in seeking treatment phenomenon, a number of theories have been put forth as having the potential to explain AMI delay, much of the research investigating AMI care seeking delay has been a theoretical in nature. Although AMI care seeking delay has been explained from the perspective of Health Belief Model (Dracup et al., 1995; Reilly, Dracup, and Dattolo, 1994), Symbolic interactionism (Dracup et al., 1995), the self-Regulatory Model of illness Behavior (Johnson and King, 1995; Johnson-Zerwic, King and Wlasowicz, 1997; Horne et al., 2000; King and McGuire, 2000; Mckinley, et al., 2000; Buckly et al., 2006; Walsh et al., 2004, and the AMI Coping Model (Reynolds and Alonzo, 2000; Fox-Wasylyshyn, 2005; Roe, 2006). Most of these theories have been tested in term of their ability to explain AMI delay, and few have

been used as a guiding theoretical framework in research studies (Dempsey, Dracup and Moser, 1995; Walsh et al., 2004 (Self-Regulatory Model); and (Really et al., 1994) (Health Belief Model).

1) Theory relevant to decision to seek treatment in AMI patients

The Self Regulatory Model of Illness Behavior (Leventhal;, 1970; Leventhal and Diefenbach, 1991; Leventhal, et al., 1980) has been used to examine a number of situations including health promotive and illness behaviors (Baumann, et al., 1989; Prohaska, Leventhal, and Keller, 1985). According to this model, sign and symptoms are keys in the cognitive representation of health threats and are targets for coping. A diagram of the Self-Regulatory Model is depicted in Figure 2.3

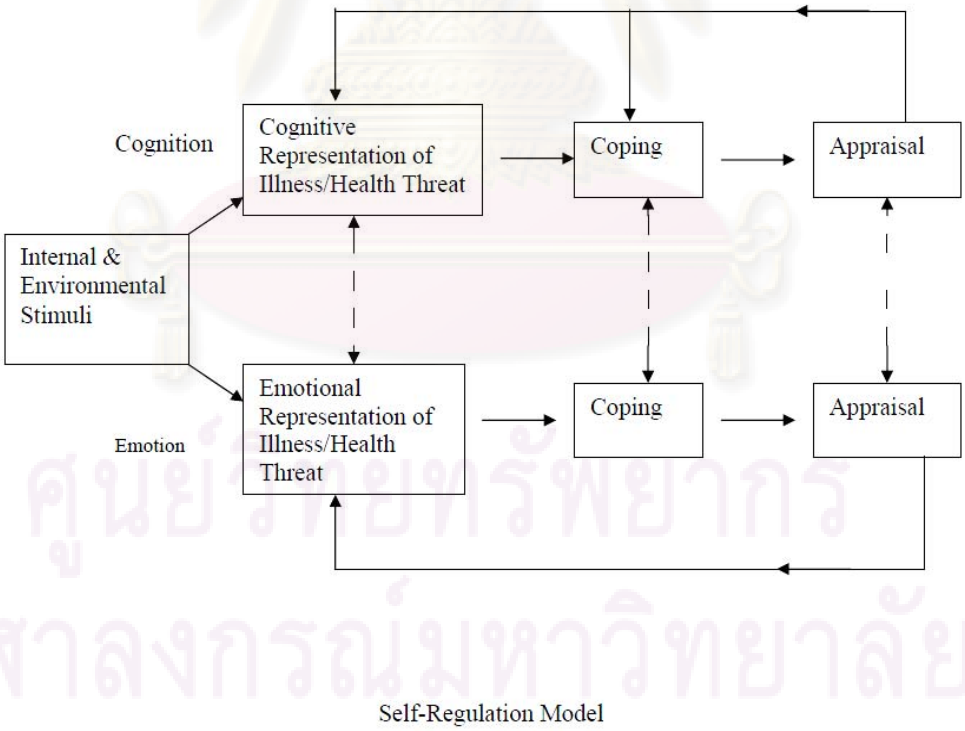


Figure 2.3 The Self-regulatory Model (Leventhal & Cameron, 1987)

As Figure 2.3 depicts, a target sign or symptom gets the attention of the individual and initiates the self-regulatory process. Sign and symptoms are then compared with knowledge of prior experiences of self or others and a mental representation are elaborated in five areas: (a) identity, (b) timeline, (c) consequences, (d) cause, and (e) expectations about controllability (Leventhal and Diefenbach, 1991). Representations guide the selection of coping strategies which are subsequently appraised. An appraisal that actions fail to reduce or alleviate the symptoms can lead to chances in coping strategies, alterations in the illness representation, and/or emotional distress (Cameron, et al., 1993). As signs and symptoms continue and coping strategies are utilized and appraised, the illness representation is increasingly elaborated, with more varied coping procedures utilized, including seeking medical care if needed. In summary, signs and symptoms initiate the decision process and then continue to play a role throughout the illness experience.

The SRM suggests that emotional processes parallel cognitive process during an illness episode. Emotional reactions such as anxiety and fear can be triggered by sign and symptoms (Benyamini, Leventhal, and Leventhal, 2000), by perceived consequences, or by coping failures (Easterling and Leventhal, 1989).

2) Application of SRM among AMI patients

A theoretical model deduced from Leventhal and colleagues, the Self-Regulatory Model to focuses on the individual's personal perception of the presenting signs and symptoms, is important to the understanding to the phenomena of AMI delay in seeking treatment.

SRM theory of showed the information processing explains how behavior is guided by a negative feedback system at the macro level of processing information by humans. The Self-Regulation Model that may be useful in explaining the delay in AMI. Components of both of this information processing theory are proposed to help explain delay in seeking treatment.

A cognitive illness representation of an experience is essential to information processing system. A cognitive illness representation is like a mental image, also referred to as a schema. The schema is a representation to which past and future experiences are referred for interpretation, development of plans, and action directed at achieving goals. Information from various sources influences the composition of the cognitive illness representation (Johnson, 1992).

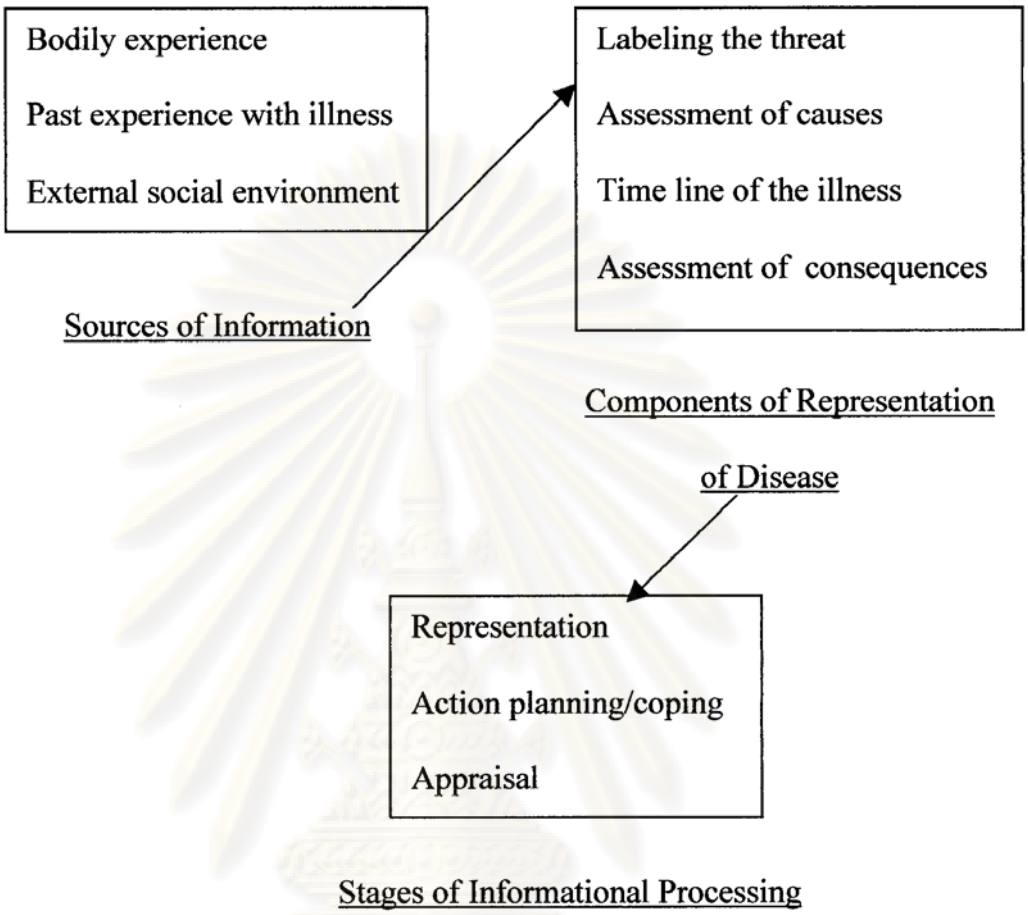


Figure 2.4 The Stage of Information processing in SRM

The representation is organized hierarchically from specific to graded levels of abstraction. A label for illness such as heart disease is at a high level of abstraction. The location of the symptoms, treatment, and prognosis are at lower level of abstraction. The specific elements of the experience of symptoms of heart disease or having a heart attack are at the lowest of abstraction or the concrete level. Individuals can use both abstract and concrete representation about their experience (Johnson, 1992). In an information-processing system the goal or desired are part of the system. The desire to achieve a goal is believed to activate the system. Goals also are arranged

hierarchically. The highest or most of abstract goal might be to have a goal life. An intermediate goal may be feeling healthy. A more specific goal may be for the immediate pain or discomfort to stop.

Theoretically, the test phase begins as input enters the system, is incorporated into an existing state, and compared with a preexisting standard or goal. If the current state and the standard are incongruent, behavior is initiated in the operate phase. The purpose of the behavior is to reduce the discrepancy between the current state and the standard. Testing reoccurs between the current state and the standard and if the discrepancy has been resolved, the person exits the system. If incongruity is recognized, behavior can be inhibited in individuals who lack of confidence, skill, or abilities. The behavior also can be influenced by environmental influences or by a novel situation for the individual (Carver and Scheier, 1982).

In delay in seeking treatment for symptom of AMI, this expectancy outlook could mean seeking treatment early or late depending on if the individual believes his symptoms can be alleviated only going directly to the emergency room.

The SRM provides a framework to explain how people interpret and cope with health threats. In the SRM, the individual is conceptualized as an active problem solver who is engages in parallel processing of two responses: the perceived reality of a health threat and emotional reaction to this threat (Leventhal and Diefenbach, 1996). Individuals are thought to be motivated to regulate or minimize their health-related risks and act to reduce these health threats in ways consistent with their perceptions of them.

3) Basic Assumptions of the Leventhal's SRM

SRM model is based on four important assumptions (Leventhal, Nerenz, and Steele, 1984; Reynolds and Alonzo, 2000).

1. Active Processing, it is assumed that behavior and experience are constructed by an underlying information-processing system that integrates current stimulus information with either innate and acquired codes or memories. An individual's experience of the world and its objects, emotional reaction to them, and coping reactions are created and organized by this processing system on a moment-by-moment basis.

2. Parallel Processing, the processing of information involves two parallel processing pathways. One pathway is primarily a conceptual, deliberative system that involves semantic knowledge (derived from culture), controlled, abstract processing, and procedural plans for coping with a health problem. The other is primarily emotional-a concrete, automatic system that involves episodic memories (derived from personal experiences) and perceptual, experiential processing, such as somatic sensations, feelings of fear, and impulsive coping response. The two pathways interact as the individual responses to a health and illness experience. The interaction of the two pathways has important implications for the processing of symptoms and sensations. Emotions are thought, in essence, to create or influence the climate in which symptoms are processed. They can both influence symptoms interpretation and generate additional symptoms that, when incorporated into the person's representation, influence coping and appraisal. Therefore, internal and external cues of health threat activate conceptual, reasoned efforts to understand and control the

health threat. They also elicit concrete, emotional responses and effort to control these emotions (Leventhal, Nerenz, and Steele, 1984, 1997).

3. Stages in Processing, the processing system is assumed to operate in three stages: illness representation, coping, and appraisal (Leventhal, Nerenz, and Steele, 1984).

During the *first stage*, the individual creates the definition or the representation of the problems and the emotion accompanying it. During this stage, a person perceives the illness stimulus in two aspects simultaneously, i.e. cognitive illness representation and emotional 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 AMI, semantic knowledge/memories, for instance, knowledge of person concerning risk factors of AMI 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.

Second stage action planning/ coping stage, involves the development and execution of the response plans for coping with both the problem and emotion. This stage is directed by individual's representation or definition of the problem and determines the goal setting.

The *third stage* is the appraisal stage, where the individual determines if the coping responses have moved the individual closer to or future from the goal specified by the representation. After this stage, the process is recursive as

information feeds back to previous stage and can alter the individual's coping strategies and/or the way the problem is defined or represented.

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 Meisechke et al., (1995), the first strategy for coping with AMI symptoms is mostly unintentional, i.e.; resting, stay still, taking sublingual medicine or other medicine as effective strategies to cope with past analogues 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. The individual's process information in *hierarchical processing* that operates at both concrete and abstract levels. Problem-based representations are likely to be influenced by abstract information. Emotional responses are more depend on concrete processing. Processing can begin at any level, but integration of the concrete and abstract components into the whole picture is important in the construction of the illness representation.

In conclusion, people obtain information from several sources that can influence their illness representation, the first stage of the model. These sources, according to Leventhal et al., (1984), are culture, social communication and interaction, and the individual's personal illness experience, Culture is made up of

belief, values, and language that are used to describe illness. For example, if an individual experiences symptoms, they use these resources to try to understand and describe their symptoms. Or if individuals are given a diagnosis or label they will try to identify symptoms associated with that label. Personal past experience and whom individual interacts with may also influence their interpretation of what is happening to them.

The illness representation is a mental picture that provides a schema by which symptom are interpreted. This provides meaning to the illness experience and drives goal setting and behavior. For example, if the individual's symptom experience matches his or her pre-set schema for symptoms of an AMI, then the goal may be to get help. The behavior is influenced by how the goal is expected to be achieved.

Major variable associated with delay in AMI patients

In order to be specific understand variety of factors that specific to AMI delay in seeking treatment, literature related to this phenomena between 1995-2010 were summarized as follows;

1) Severity of symptom

The experience of a symptom, whether it is recurring or new, requires much thought on the part of the person to determine what action, if any, is to be taken. Several theories and model have been proposed in an attempt to describe the processes that occur as the person analyses the symptoms and reaches a decision about the necessary action. The Self regulation model of illness behavior by Leventhal and Nerez has the person as focal point (Ward, 1993), and provided the integration of both individual and social factors (Leventhal, Diefenbach, and

Leventhal, 1992). It is only through understanding the person's perception of the threats posed by the symptoms that it is possible to begin to understand the response and actions of the person (Ward, 1993) an overview of the SRM is presented, followed by an in-depth review of the literature related to delay to seek treatment in the presence of symptoms of AMI. Three major areas contribute to the SRM: 1) sources of information, 2) components of representation of disease, 3) stage of information processing.

In this study in first stage the bodily experience with illness and external social environment make up sources of information.

Severity of symptom was derived from stage of sources of information, from bodily experience that has been identified by Leventhal as basic source of information used in the process of defining an illness experience and refers to the symptom that AMI patients experience.

Symptoms are subjective phenomena and are indicators of departure from normal function, sensation, or appearance (Giardino and Wolf, 1993). The definition of symptom is supported by Van Wijk and Kolk (1997), who defend a symptom as "an aversively perceived internal state". Phenomena are generally labels as symptom only when they are perceived as deviating from the person's normal state of health.

Internal symptoms are caused by chemical or neural alterations that are sensed by the person (Adam, 1989). The international association for the study of Pain defined pain as an "unpleasant sensatory and emotional experience associated with actual or potential tissue damage" (Karoly, 1985, p.467). The chest pain of AMI is caused by a state of ischemia in the myocardium resulting from decreased oxygenation related to impaired blood flow. In the setting of AMI, more than just the

sensation of the symptoms is occurring. Perception is taking place as the person incorporates difference symptoms with past experience in an attempt to understand the symptoms in the present context.

Symptom serve the purpose of signaling the possible existence of the disease state in the body, and are usually key components in illness diagnosis (Teel et al., 1997). The presence of pain with an AMI can result in suffering, and the suffering can lead to the behavior of seeking treatment for the symptom of pain. In this way, seeking treatment would be an example of pain behavior as the end stage in the progression from the notification to action (Keroly, 1985).

When compare with other signs of AMI, studies have shown that increased severity of pain and the symptoms associated with hemodynamic instability (e.g.dizzeness, diaphrosis) have been most consistently to shorter delay times (Goldberg. et al. 1999: McKinlay, et al., 2000: Schmidt and Borsch, 1990). The AHA (2005) describes the AMI warning signs as “starting slowly” with mild pain and discomfort” Chest pain is the most common symptom of AMI in both men and women.

Symptom severity was an additional indicator in phase one, as the part of bodily experience from source of information in SRM, for each symptom that the participant experienced. They were asked to check how severity was? (when the symptom was at its “worst”). On a scale from 0 (no pain at all) to 10 (the worst pain imaginable). Because most participants had multiple symptoms with difference severities, the highest severity score was utilized as an indicator of overall symptom severity in the analysis.

A number of studies that have examined the relationship between severity of pain and delay in treatment for AMI have utilized 0 to 10 visual analog pain scale (Lefler and Bondy, 2004: Moser, Mckinley, and Dracup, 2005).

An association between the severity of presenting symptoms and the time to hospital arrival was reported by the GISSI group (1995). They found that compared with patients who reported strong pain; those with mild / moderate pain were significantly more likely to present more than 6 hours after symptom onset (OR: 1.86, 95% CI: 1.28-2.72). Similarly, Horne and colleagues (2000) examined symptom severity in relation to delay in seeking treatment time. A visual analogue scale was used to assess symptom severity. They reported a weak negative correlation between symptom severity and pre-hospital time (r= -0.24; p<0.05). A qualitative investigation has also suggested that the presence of less severe symptoms may influence decision making processes, leading individuals to doubt that their symptoms could be those of a heart attack (Pattenden et al., 2002). Other studies have found no association between pain scores (Walsh et al., 2004) or other assessments of pain severity (Dracup and Moser, 1997), resulted indicated that factors other than the severity of symptoms are important (Dracup et al., 1997; Mumford et al., 1999).

However, in this study is selected severity of symptom to represent the internal stimuli on the SRM to testing the SEM.

2) Cognitive illness representation due to heart related in AMI patients

The hypothesis that illness representations guide seeking treatment, as described above, is supported by empirical evidence. In a longitudinal field study, Cameron et al conducted 111 interviews amongst people spontaneously seeking

medical care from their physician (Cameron et al., 1993). They compared the illness representations of treatment-seekers with 111 matched controls. The authors found that care seekers were more likely than controls to have identified their symptom problems with a disease label ($p<0.02$). Symptoms were rated as more serious by treatment-seekers than by controls ($p<0.001$) and ratings of symptom disruption of daily activities were higher for treatment-seekers compared to controls ($p<0.01$). The data from this study support the hypothesis that symptoms play a key role in the initiation of treatment seeking.

When an individual experiences with health threat (AMI symptoms) a process of interpretation is brought into play. The individual analyzes the health threat and seeks an understandable explanation, the representation. The major attributes of illness representation are involving five distinct dimensions: identity, timeline, cause, controllability, and consequences.

1) 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 chest pain. Illness Identity or illness labeling of patients was an important key to assist patient to cope with the illness effectively. At the early stage of AMI, 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 (Dracup and Moser, 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 media (Leventhal et al., 1984). At the onset of AMI, if the patients

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 effect to the decision to seek treatment (Petrie and Wainman, 1997).

***2) Cause*:** for most people, a heart disease is an awful and life threatening experience. When a patient has been diagnosed with an AMI, they will naturally some thoughts about the cause of their illness. According to findings from McKinley et al., (2004) study found that AMI patients attribute symptom to the heart related in USA and England have shorter decision to seeking treatment than Japan AMI patients. However, many patients were not able to attribute the cause of symptom to the heart related. It's associated with delay in AMI patient (McKinley et al., 2004; Ottesen, Dixon, Torp-Pedersen, and Kober, 2003).

***3) Time-line*:** This component related 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 had AMI symptoms as a part of the chronic illness can cause a delay on the decision to seek treatment (Johansson and Stromberg, 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 AMI 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. Walsh et al., (2004) they found that the relationship between 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. The results by King and McGuire, (2007) patients were of the opinion that if they perceived the serious consequences of MI, they would have made a decision in a much shorter time. Fear is the most powerful motivation to decide to seek treatment when MI occurred, which did not according to the finding by McKinley, Moser, and Dracup, (2000) who was found that the fear of consequences caused more delay to seek treatment.

5) Control/Cure ability of the illness: This component is concerned with whether or not symptoms can be controlled or cured and on which level. The prior research found that the control/cure component of cognitive representation had no relationship with the decision when to seek treatment of AMI patients (Walsh et al., 2004; Quinn, 2005). Perceptions of control have also been explored. Burnett et al (1995) found that early responders (pre-hospital time <60 minutes) reported less perceived control over their symptoms than late responders (pre-hospital time >60 minutes). In an international comparison of data on delay in presentation in the context of AMI, McKinley et al (2004) report that those with high perceived ability to control symptoms have significantly higher median delay times than those with low perceived ability to control ($p<0.05$).

O'Carroll et al (2001) used the validated Multidimensional Health Locus of Control scale (Norman and Bennett, 1995), amongst 72 patients 3-5 days post-MI.

They found that the belief "*health is largely due to chance factors"* was the best predictor of extended time to presentation. This suggests that those who believe there is little they can do to control their health are most likely to delay and is therefore consistent with the findings of the previous studies.

3) Emotional response to symptom has been found to influence the decision to choose an illness coping strategy as well as a cognitive illness representation. According to Walsh (2004), who studied factors influencing the decision to seek treatment for AMI, the resulted revealed that patients who had a high level of emotional illness representation, such as anxiety, stress and panic, need a shorter decision time to seek treatment after the onset of AMI. Consist with the study by McKinley, et al., (2004) they found anxiety had predicted delay in seeking treatment.

4) Alternative Coping Strategies or action planning. Coping with diagnosis of MI has been studied, there has been little done to describe the specific strategies utilized during the time when signs and symptoms of MI are experienced to seeking formal health care. Coping response, such as seeking support, leaning new skills, and venting anger are the cognitive and behavioral effort a person used in response to a stressor. Research has demonstrated that individuals with MI employ a wide range of global; the most significant psychosocial reason is the correct interpretation and attribution of presenting symptoms, more often concluding in treatment seeking actions by the patient. Dracup et al., (2003) who supported the assumption that patient who correctly attribute their presenting symptoms to their hearts have decreased delay interval. Similarity, McKinlay, et al., (2004), who examined perceived seriousness of presenting symptoms and reported that if the symptoms were not perceived by the

individual as serious in nature, substantial delays occurred. According to Walsh, Lynch, Murphy, and Daly, (2004) they found the active-cognitive coping and problem-focused coping made significant contribution to delay. There were many similarities across the studies in the affect of behavioral response to AMI symptom (McKinley et al., 2000; McKinley, et al., 2004; Dracup et al., 2003; Walsh et al., 2004), reported as influencing increased delay in treatment seeking delay for symptoms of AMI, include various waiting for symptom to go away (McKinlay, et al., 2000). Self-treatment used the medications prescription and non-medication (Fox-Wasylshyn, 2007). Addition fearing embarrassment (Dracup et al., 2003) was also related to an increased delay time.

5) Appraisal Symptom Seriousness

Individuals' appraise of the symptoms they experience have also been found to be related to seeking treatment times. The appraisal of symptom seriousness has been investigated most often. Consistently, studies have found that those who appraise their symptoms to be serious have shorter seeking treatment times than those who do not (Burnett et al., 1995; Dracup and Moser, 1997; Rasmussen et al., 2003; McKinley et al., 2004). Indeed in the relatively large (n=501) study by Burnett and colleagues (1995) the most significant predictor of pre-hospital time was the appraisal seriousness of symptoms.

A study conducted in Scotland amongst survivors of MI reported that "*not thinking it was serious*" was the second most common reason offered by participants who called for help more than 1 hour after the onset of symptoms ("*thinking the problem would go away*" being the most common) (Leslie et al., 2000). The same

study found that thinking that symptoms were '*not important enough for 999"* was the most common reason for choosing the GP as the first point of contact.

The usefulness of the model as a framework for explaining delay in seeking treatment, amongst people with AMI, was recently examined by Walsh et al., (2004). Sixty-one consecutive patients admitted to a coronary care unit (CCU) were interviewed by a health psychologist 2-4 days post MI. The IPQ (Weinman et al,. 1996) was used to assess illness representations. Data from measures such as the McGill Pain Questionnaire (Melzack, 1975) and the Coping Response Inventory (Billings and Moos, 1981) were also analyzed, as were demographic, clinical and social variables. The consequences scale of the IPQ was found to be significantly related to delay (r=-.50, p<0.01). Those who perceived their MI to have serious consequences had shorter delay times. Coping style was also found to be significantly associated with delay. Those with strong active-cognitive coping style or strong problem-focused coping style had shorter delay times (r=-.46, p<0.01; r=-.43; p<0.01).

Hierarchical multiple regression was then used to evaluate the components of SRM. Demographic variables were controlled for in step1; symptom identity and pain index were entered next; step 3 comprised cognitive and emotional representations; coping response was entered in step 4 and appraisal in step 5. Cognitive and emotional representations explained an additional 13% of variance to that explained by demographic, symptom and pain variables. Coping explained a further 16% of variance in stage 4. The overall model was significant, explaining 37% of the variance in patient delay. These data suggest that self-regulation theory is a useful guiding framework for research, and possibly intervention, related to delay to seek treatment

for possible symptoms of AMI. However, the sample of patients in this study was relatively small (n=61) and composed only of those who received a diagnosis of AMI. The participants were not randomly selected and may not be representative of all patients with AMI. The methodology relied upon patients' recall of their thoughts and emotions a number of days after the event, and it may be that their scores were affected by their subsequent experience of MI and hospital care. It would be useful to further evaluate the explanatory power of the model in the context of a larger, randomly selected group of patients. Ideally this would be conducted at the onset of symptoms. However, given the significant practical difficulties involved in identifying individuals at this time, an alternative would be to identify people at the time they seek help. This would allow the SRM to be evaluated without reliance on recall. This would also allow the opportunity to study the components of illness representation amongst a group of people who have AMI suddenly event. Such a study could explore whether the model accounts for how people represent their symptoms to labels are applied, whether components of the model help to differentiate those who seek help soonest from those who present later and whether the model adds to the medical model in identifying those at highest risk of a poor outcome. Exploration of such questions has the potential to both inform future interventions aimed at reducing treatment delay for people with symptoms of AMI and to contribute to the body of evidence around SRM theory and help-seeking.

Factors influenced delay in seeking treatment in AMI patients

Many studies have been conducted with the aim of identifying factors associated with longer delay in seeking treatment in patients with AMI, a number of factors have been identified as being associated with longer delay in seeking treatment, these are described below.

1) Internal stimuli and Social-environmental stimuli:

Internal stimuli: These factors included 3 systematic review and in 10 predictive studied: age, gender, socioeconomic status (SES), level of education and clinical history such as co-morbidity of chronic health problems (Diabetes, Angina, Hypertension, COPD) and including previous MI (Hewitt et al., 2004; Lefler and Bondy, 2004: Moser et al., 2006).

Age: A number of studies have found a relationship between age and delay in seeking treatment time. The Worcester Heart Attack Study group in the USA conducted a retrospective chart review of 3837 patients who had been hospitalized and received a discharge diagnosis of AMI in seven, one-year periods between 1986 and 1997 (Goldberg et al., 2000). They found that when those who arrived <2 hours after symptom onset were compared with those who arrived >2hours, there were significantly more patients aged over 75 years in the latter group. Multiple regression analysis confirmed age was associated with an increased risk of delay. Similarly, in a study of patients with AMI the GRACE investigators found that 32% of patients aged less than 55 years presented within 2 hours whereas only 17% of those aged over 75 years did so (Goldberg et al., 2002). Similarly patterns have been identified in other studies although different time points and age ranges have been used (GISSI, 1995; Gurwitz et al., 1997; Goff et al., 1999; McKinley, Moser, and Dracup, 2000). The

contradicted resulted; early researcher reported that age does not affect delay time (Quinn, 2005; Nouredine et al., 2006; Walsh et al., 2004).

Dracup et al., (1997) compared mean delay in seeking treatment times between patients of different age ranges. The authors found that patients aged 61-86 years had significantly longer delay in seeking treatment times (mean=122 mins.) than those aged 41-60 years (105 mins) or 29-40 years (66 mins.). Investigators using data from Global Utilization of Streptokinase and Tissue Plasminogen Activator for Occluded Coronary Arteries [GUSTO]-I and GUSTO-III found that patients with a delay in seeking treatment time of less than 2 hours tended to be younger (medianage = 60 years) than those who arrived at hospital later than 2 hours after symptom onset (64 years, p=0.001) (Gibler et al., 2002)

However, a few studies have failed to find an association between age and delay in seeking treatment time. Burnett and colleagues (1995) studied 501 patients who formed a subgroup of participants in the Thrombolysis and Angioplasty in Myocardial Infarction [TAMI] trials (Burnett et al., 1995). Those who requested medical assistance within 60 minutes of the onset of symptoms (early responders) were compared with those who requested assistance later than 60 minutes (late responders). No significant differences in age or other demographic characteristics were found between the two groups. The mean age of the early responders was 57.6 years vs. 57.7 years in the late responder group (*ns*).

Similarly, in a study of 88 patients with AMI conducted in the UK, Horne et al (2000) found no relationship between age and delay in seeking treatment time. Possible reasons for the conflicting findings are difficult to identify. Patients aged over 76 years were excluded from participation in the TAMI trial; the absence of this

much older group might have reduced the potential for this study to identify an association. This study also used patient decision time as an outcome measure rather than total pre-hospital time. It is possible that whilst patients take similar times to request medical attention that their subsequent management differs systematically, on the basis of their age, so that older patients ultimately arrive later at hospital.

The different components of delay in seeking treatment time were examined in a Danish study of 250 patients with AMI and thus provide an opportunity to address this hypothesis (Ottesen et al., 2004). However, in this study too, age was not found to be associated with any of the components of delay in seeking treatment (time from onset of symptoms until hospital presentation; time from the onset of symptoms until seeking medical attention; time from seeking medical attention until arrival and time from arrival of ambulance to hospital). However, the authors did conclude that the different components of delay in seeking treatment were not influenced by identical factors. Further research which differentiates the delay in seeking treatment components of delay would be helpful.

A number of possible reasons for longer delays amongst older people have been suggested. There is evidence to suggest that as people get older, they are more likely to attribute many symptoms to ‘normal’ ageing (Leventhal and Prochaska, 1986). Older people are more likely to have existing comorbid conditions, and this may complicate recognition of cardiac symptoms (Ryan and Zerwic, 2003). They are also likely to experience a greater number of symptoms in general. Additionally, older people are more likely to live alone - this may influence how and when they seek help (Gibler et al., 2002).

Female gender, It is widely reported that women are likely to have longer delay in seeking treatment times than men. Several very large investigations provide evidence of this. Data from 364,131 patients included in the US National Registry of Myocardial Infarction [NRMI-2] between 1994 and 1997 showed median delay in seeking treatment times to be longer for women (Mdn=2.4 hours) than for men (2.0 hours) (Goldberg et al., 1999). Analysis of data from the GUSTO trials by Gibler et al., (2002) also demonstrated that 35% women versus 27% men arrived more than 4 hours after the onset of symptoms.

In relation to AMI, data from The GRACE project have been reported. Data from 3,693 patients with STEMI, 2,935 patients with 3,954 of NSTEMI were used to explore factors associated with delay to hospital presentation (Goldberg et al., 2002). Multivariate analysis demonstrated that, for each of the AMI, men were significantly more likely to present within 2 hours of symptoms onset than women. Other studies have found similar results (Gurwitz et al., 1997; Sheifer et al., 2000). However, the evidence is not consistent. Some investigators have found that relationships identified between female gender and delay in seeking treatment time loses their significance when other factors (e.g. age) are controlled for in multivariate analysis (GISSI, 1995; Goff et al. 1999; Goldberg et al., 2000). Other studies have not found gender differences in delay in seeking treatment time amongst patients with AMI (Burnett et al., 1995; Bleeker et al., 1995; Dracup et al., 1997; Dracup and Moser, 1997; Horne et al., 2000; Schoenberg et al., 2003; Dracup et al., 2003; Zerwic et al., 2003).

A number of reasons why delay in seeking treatment times might be longer for women than for men are suggested in the literature. There is evidence to suggest that women may be more likely to present with atypical symptoms (Meischke et al., 1998;

Canto et al., 2000). This is a factor which has also been associated with increased delay in seeking treatment (Dracup et al., 1997; Canto et al., 2000; Grossman et al., 2003). In each of the studies where the relationship between gender and delay in seeking treatment time did not remain significant in multivariate analysis, age was identified as a significant factor. It has been suggested that women may perceive their personal risk of CHD to be low and that this might influence what they do in the event of experiencing symptoms (Wilcox and Stefanick, 1999).

Martin and colleagues have provided evidence that there are gender biases in the attribution of cardiac symptoms. In one study, undergraduate participants were presented with vignettes where gender, symptoms and life events were manipulated (Martin et al., 1998). Participants were significantly less likely to attribute symptoms to possible cardiac causes for female victims reporting stressful life events than for females without such stressors or for male victims with or without concurrent stressors. Similarly, in a subsequent study of 157 patients who had experienced MI, women were found to be significantly less likely than men to attribute their pre-hospital symptoms to MI (Martin et al., 2004).

Numbers of Clinical History, number of cormorbidity of illness, especially those that are considered risk factors for CHD such as diabetes and hypertension (Gilbler et al., 2002) have been associated with delay time. Including with Previous MI (Quinn, 2005), and They are several possible explanations for the increased delay time in individuals with previously diagnosed CHD who experience sign and symptoms of MI. Individuals with previous acute episode of MI may have memories of prior sign and symptoms, their responses, and the consequences that influence the decision to seek treatment. Therefore, a previous MI may actually act as a barrier and

delay treatment seeking (Quinn, 2005). This contradiction the study by Dracup et al., (2003) who found that non significant different in patients with history of MI not delay more than patients not have previous MI and Ottesen, Dixon, Torp-Pedersen, and Kober, (2003) found, history MI shorter decision to seek treatment less than non previous MI.

***Level of education*:** The surprisingly in this factor found in study by Nouredine et al., (2006) they reported that the longest delay (over 22 hours) was the patient graduate University education but did not associated with delay in overall. Contradiction with the study in USA and Australia (McKinley et al., 2000) the education level less than 12 years have predicted delay in patients with AMI.

***The Socio Economic Status**:* from review found that patients with AMI had lower income associated with delay in seeking treatment (McKinley, Moser, and Dracup, 2000). Inconsistent with Quinn (2005) who found the income of AMI patients not predicted delay in seeking treatment. Some investigators studied in type of non medical insurance (Walsh, et al., 2004; Nouredine et al., 2006) but result show non predicted delay on AMI patients.

The other factors not includes in my study by found in review literature are marital status (Dracup et al., 2003; Nouredine et al., 2006), work status and type of occupation (Nouredine et al., 2006), pain intensity (Dracup et al., 2003; Walsh, et al., 2004), the symptom onset occurs at home (McKinley et al., 2000), mode of transportation (Walsh et al, 2004), not associated with delay. The Distance of place when the onset of AMI occurs associated with delay (Walsh et al, 2004).

2) Social-environment stimuli

Lay consultant (social contact) AMI patients most of all decide to contact with another person before decide to seek treatment. The results from studies can divide to 2 group; 1) contacts other people and increased delay (Ottesen, Dixon, Torp-Pedersen, and Kober, 2003) in this study have interesting result is only 32.5% of people suggest AMI patients to seek treatment. 2) Contact other people (Emergency Medical Service (EMS), non-relative, coworker) decreased the time to seeking treatment, (McKinley et al., 2004).

3) Context

The context in which the acute coronary event takes place has also been the subject of investigation. The time of day, location and presence or absence of others have been examined and are discussed below.

Time of day

Conflicting results regarding the significance of time of day have been reported. Gurwitz et al., (1997) found that patients with symptom onset between midnight and 5:59 hrs were more likely than those with symptom onset between 06:00 and 11:59 hrs to have a pre-hospital time >6 hrs. Similarly the GRACE investigators found that daytime symptom onset (noon-17:59 hrs) was associated with shortest pre-hospital times (Goldberg et al., 2002).

The GISSI group found that those experiencing symptoms at night or when asleep were significantly more likely to have increased times from symptom onset to admission than those who experienced symptoms at other times. Seventy-one percent of patients who presented in less than 6 hours did so during the day, whereas only 29% did so at night (GISSI, 1995), however the Worcester group found the

occurrence of symptoms between noon and midnight to be significantly associated with pre-hospital times of >2 hours and > 6 hours (Goldberg et al., 2000).

Reasons for these conflicting results are not clear. Evidence from a qualitative study suggests that people might be reluctant to seek help during the night and weekends (Pattenden et al., 2002). The findings of the first three studies are consistent with this hypothesis.

Location and presence of others

A number of studies have found that people tend to delay longer if they are at home when symptoms arise (GISSI, 1995; Dracup and Moser, 1997) whilst others have not (Dracup et al., 1997; Mumford et al., 1999). The GISSI investigators (1995) found that the presence of others at the time of onset of symptoms was associated with reduced delay but that the relationship of a bystander to the person with symptoms was an important moderator. Spouses and relatives were less successful in reducing delay than friends or strangers (GISSI, 1995). Living alone was also found to be an independent predictor of pre-hospital delay (OR: 2.11 95% CI: 1.57-2.83), possibly highlighting the importance of others in facilitating help-seeking. Others have not found a relationship between pre-hospital times and the presence of others in the context of MI (Dracup and Moser, 1997; Mumford et al., 1999). Horne et al., (2000) found that others were influential in the decision to call for help but only if the patient's experience of their symptoms did not match their prior expectations of a heart attack.

However, In Thai studies, none of prior studies included knowledge of AMI symptom, expected symptom as AMI symptom, coping response to symptom, and

patient's behavioral response to symptom for describe how patients experiencing AMI interpreted their symptoms and react to seek medical treatment.

Synthesized the literature review

This review literature for describe patients delay to seek treatment for AMI, the literature from electronic data based from nursing and medical literature were eligible to include 14 studies, 4 systematic review and ten predictors studies. Result from extensive review show that the major of study in this phenomena is in USA and spread to Europe and Asian developed country. Thailand is the developing country had suffering from these problems too. The factors in Western literature shown that internal and environmental stimuli are include; older age, female sex, has previous medical problems, low SES, lower educational level. Environmental stimuli include living alone or being alone; lay consultant (consult with physician, family member). In psychological factor (emotional factors, coping response, and behavioral response) were include; appraisal of symptom as not being serious or urgent, waiting for symptom to go away, concern about troubling others, fearing the consequences in seeking help, being embarrassed about seeking help, and self-treatment co-predicted increased delay in patients with AMI symptom. In Thailand have the literature on clinical and socio-demographic characteristics but many point its contradiction with Western culture. However, on psychological lag of study in Thailand describe AMI patients for this phenomenon.

The popular theory uses by several investigators are The Self-Regulation Model (SRM) (Leventhal et al., 1984) that can describe seeking treatment behaviors in AMI more than other theory. However, few studies were tested of all components

on this theory. The measurement conducts form this theory is Response to Questionnaire (Burnett, 1995) and Modified version by McKinlay and Dracup, (2000) and modified to measure coping strategies by Fox-Wasylshyn, (2005).

In Thailand lag of study conducted were conducted for test this tool and the psychological response to health threat need to be explored.

The measure of outcome variable, several studies used time to seeking treatment, its can divide by length of time (pre-hospital, hospital delay, patients delay) and the total ischemic time (1 hour, 2 hours, 3 hours, 6 hours, 12 hours and median time) it's difficult to compare patients delay to seeking treatment time because the inconsistent definition of delay time.

Summary

The literature shows that there has been a great deal of research investigating the phenomenon of delay in seeking treatment for AMI. The majority of reports focused on examination of the predictors of seeking treatment delay. As a result, many correlates of this phenomenon have been identified. The preceding literature review provides some empirical evidence to support the existence of relationships between AMI delay and the following variables: severity of symptom, cognitive- and emotional representation, appraisal symptom seriousness, and alternative coping strategies. Empirical data were supported for the existing of the hypothesized relationships between severity of symptom, cognitive- and emotional representation, appraisal symptom seriousness, and alternative coping strategies is showed the correlated resulted.

CHAPTER III

METHODOLOGY

This chapter describes the research design and methodologies used to the present study. The research design, population, sampling technique and sample selection, instrumentations, ethical approval, pilot study, data collection and data analysis procedure are included.

Research design

A cross-sectional research design was used to test a causal relationship of delay in seeking treatment in Thai AMI patients. Drawing related variables from symptom severity**,** cognitive illness representation, emotional response to symptom, alternative coping strategies, appraisal symptom seriousness and delay time to seek treatment among Thai AMI patients. The conceptual framework for this study was guided by the Self-Regulatory Illness Behavior (SRM) developed by Leventhal and colleagues (1984).

Population and sample

The target population was patients admitted to hospital in Bangkok Metropolitan with a diagnosis of AMI given by a ER physician or a cardiologist with two or three confirmatory parameters (Wong and White, 2005), The parameters were; (1) chest pain or dyspnea lasting for more than 30 minutes, (2) elevation of myocardial enzymes (troponin or CK-MB) up to more than 2 times the upper limit of normal, which could not be attributed to any other condition and (3) ischemic

electrocardiographic changes (ST segment elevation or depression) on admission, or any later changes in the electrocardiogram caused by an AMI.

1) Sample size

For structural equation modeling (SEM), there is no definite formula for calculating sample size (Joreskog and Sorbom, 2001). However, Hair et al. (1998) suggested that a minimum ratio is of at least 5 respondents for each estimated parameter (Hair et al., 1998). The parameter refers to the relationship between two variables (Hoyle, 1995). A free parameter is a parameter with unknown value, which is to be estimated from data and assumed to be non-zero, while a fixed parameter is not estimated from data and has a value fixed at zero (Hoyle, 1995; MacCallum, 1995). In this study, the proposed model included a latent exogenous variable (severity of symptom as indicated by one observe variables). In addition, there were five latent endogenous variables 1) cognitive illness representations as indicated by five measured variables (identity, timeline, control, belief in cause, and fear of consequence) 2) emotional response to symptom 3) alternative coping strategies as indicated by two observe variables (emotional focused coping and problem focused coping 4) appraisal symptom seriousness and 5) delay time to seek treatment. The total observed variables were 11; therefore, the estimated sample size is 110. However, the hypothesized model contained 18 free estimated parameters, thus a sample size of 90 was the minimum requirement. However, the measurement model of delay in seek treatment had 25 free parameters, thus sample size confirmatory factor analysis should be at least 125. In addition, approximately of 10% of minimum requirement was employed to cover the attrition of the sample selected.

Therefore, a sample of 160 Thai AMI patients was recruited for this study. Moreover**,** sample size adequately was future confirmed by SEM analysis with this study sample.

The modified model of delay in seeking treatment had a Hoelter's critical N was 232.28 (χ^2 = 31.18, *df*= 27, p= 0.26). This result indicated that the structural equation modeling with sample size 160 was judge adequate sample size (if Hoelter's critical N > 200) (Byrne, 1998; Garson, 2005).

Setting

There are 8 hospitals in Bangkok that has a cardiac center to perform invasive coronary angiogram and emergency PCI. However, Siriraj Hospital is the only place that can perform emergency PCI for 24 hours, other hospitals will perform this procedure only in official time (8 Am to 4 PM) and in the evening (4 PM to 8 PM).

According to 30 Bath scheme, the patients with AMI can admit as an emergency care in all hospital to receive the first aids and then will be refer to cardiac center in the tertiary hospital. Although all selected hospitals will receive patients with AMI directly, there are some difference criteria to receive patients especially a referring case. Phramongkutklao Hospital, and Police General Hospital mostly admits a patient who is a police or solider or a relative of them. Siriraj Hospital, King Chulalongkorn Memorial Hospital, and Rajvithi Hospital mostly admit a patient around Bangkok who uses 30 Bath project, government support, and/or self payment.

2) Sampling technique

The following steps were followed to gather participants and to maximize the normal distribution of the samples. The stratifies random sampling was used

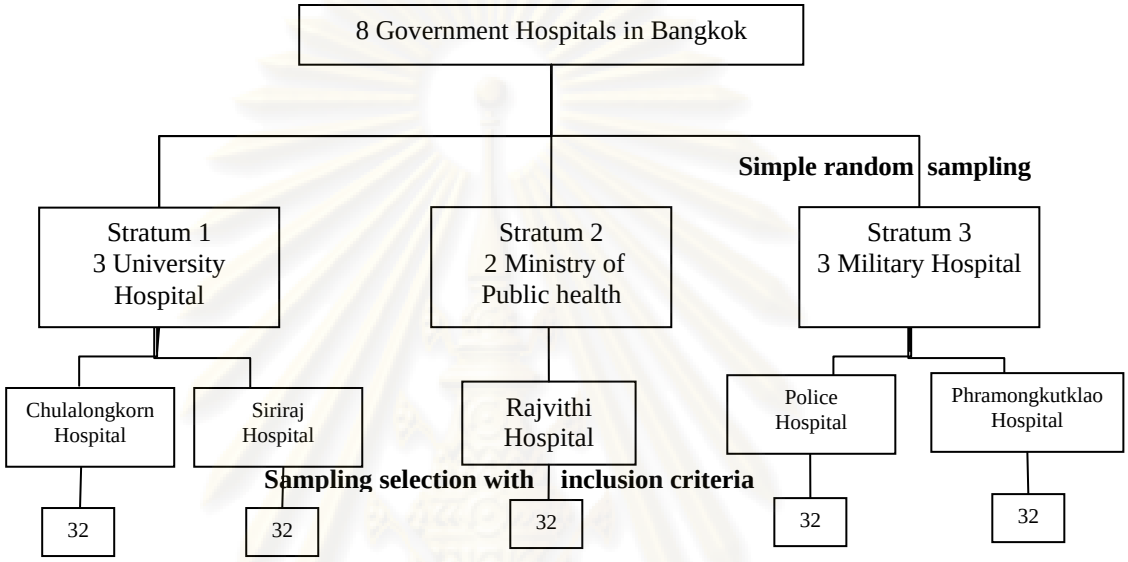


Figure 3.1 The sampling selection with stratifies random sampling

3) Sampling Selection

According to the study of Phrchuabmob and colleagues (2004), approximately 13 to 14 patients were diagnosed for AMI per month in each hospital around Bangkok. To include at least 160 participants in this study, five hospitals in Bangkok and nearby were random sampling based on Thai type of hospital justification.

The first stages, according to the overall government hospital that prompt to emergency cardiac care around Bangkok were 8 hospitals. It can divided into 3 strata these includes; 1) 3 from University hospital (Siriraj Hospital, King Chulalongkorn Memorial and Ramathibodee Hospital; 2) 2 from Ministry of Public health Hospital (BMA General Hospital Bangkok (Klang hospital) and Rajvithi Hospital); and 3 from Military hospital (Bhumibol Adulyadej Hospital) Phramongkutklao Hospital, and

Police General Hospital, then selected the hospital by draw lot, do not add return. The 5 hospital were selected participants in the next stage with sampling selection with inclusion criteria. The number of participants who were recruited from each setting depends on the number of patients' admission in each hospital. Thus, the duration of the data collection was 11 mounts, January 2008 to November 2008 that describe as follow;

Table 3.1 Summary the Hospital were selected include in this study.

Characteristics	Number	Percentage
Hospital		
Siriraj Hospital	36	22.50
Phramongkutklao Hospital	29	18.12
Rajvithi Hospital	39	24.38
King Chulalongkorn Memorial Hospital	28	17.50
Police General Hospital	28	17.50

The inclusion criteria for the participants in this study were as follows.

1) having no cognitive impairments,

2) had the time to seek treatment equal and more than 2 hour

3) they had recollection of the pre-hospital symptomatic period

4) aged 20 years or over,

5) hemodinamically stable (blood pressure and heart rhythm),

6) the AMI event began prior to hospital admission,

7) at least 24 hours and not more than 72 hours, had elapsed since admission,

8) pain free,

9) able to speak Thai, and≥≤

10) willing to participate in this study

Patients were excluded if they had any of the following criteria

1) Being diagnosis with schizophrenia and other mental disorders or had a history of mental illness,

2) who were cognitively impaired,

3) had a surgically treated for AMI symptom,

4) had major medical complications,

5) were physically unstable at 72 hours after admission, and

6) developed an AMI while being hospitalized for other reasons

Instrumentations

Several types of instruments were employed to collect the data addressing the research proposes, including the interviewing form and the data collection form. The interviewing forms included 1) the personal information sheet, 2) the Response to Symptom Questionnaire (RSQ), and 3) the Coping with Heart Attack Symptoms Questionnaire (CHASS). All questionnaires received permission from the developer for used in this study (See appendix E). The variables and its indicators or instruments are presented in Table 3.2

Table 3.2 Variable and their indicators or instruments in the study

Variable name	Indicators or instruments
Severity of symptom	Score access by Response to Symptom Questionnaire (RSQ) pain severity
Cognitive illness representation	Score access by the Response to Symptom Questionnaire (RSQ) cognitive domain
Emotional response to symptom	Score access by the Response to Symptom Questionnaire (RSQ) emotional domain
Alternative Coping Strategies	Score access by Coping with Heart Attack Symptom Scale
Appraisal symptom seriousness	Score access by the Response to Symptom Questionnaire (RSQ) symptom appraisal domain
Delay to seek treatment	Score access by the Response to Symptom Questionnaire (RSQ)

1) Translation procedure of the translated instruments

After obtaining written consent from each author, the instruments were applied and modified by the researcher to reflect delay in seeking treatment among AMI patients through back-translation.

The RSQ and CHASS were translated into Thai versions according to the translation-back translation method. The instruments were translated from English into Thai by the researcher and an independent translator. The Thai versions of instruments were evaluated by two bilingual people who had the ability to use both Thai and English languages (English Development Institute, Mahasarakham University). The questionnaires were translated back into English by two Thai-English independent translators. The investigator then compared both versions in the

original language, conducted checks with the bilingual people, discussed the differences, and produced a final consensus version.

2) Instrument refinements

After translation, the researcher modified the translated instruments to achieve a closer cultural fit for AMI patients. The Thai versions of all instruments were refined based on a preliminary work conducted by the investigator with AMI patients with similar characterizes with sample inclusion criteria. The preliminary work consisted of informal interviews with 5 AMI patients: who admit in CCU from Khon Kaen Hospital. Open-ended interviews were applied to assure that instrument contents and language were suitable for Thai AMI patients. The participants were selected from a broad range of backgrounds; two AMI patients had elementary education, three AMI patients had secondary education, and one AMI patients were holders of bachelor degree. The participants were encouraged to share their opinions regarding the relevancy of the items, and appropriateness to the culture of AMI patients. The participants were also encouraged to think of additional items that could potentially be used in each questionnaire. The following are examples of questions asked “Did you understand all the words?” “Do you know what is being asked?” “Do you have any question about it?” “How could the wording be clearer?” At the end of the interview, participants were asked questions such as “Did any of the questions make you feel uncomfortable?” “Are there questions that we missed, and should have been included?”.

3) Content validation of the instruments

Content validity of the RSQ and CHASS questionnaire were determined by five Thai AMI and Theory experts including four nursing instructors and one physician expert. The experts were asked to rate the level of relevancy between the items and the definition of the concepts as they represented. A four-point Likert-type scale ranging from 4 (strongly relevant) to 1 (Strongly irrelevant) was used to rate each item. The Content Validity Index (CVI) was calculated for each instrument. The CVI of the RSQ and CHASS questionnaire were 0.90 and 0.85 respectively. Some items were rephrased following expert's recommendation and advisor's suggestions.

4) Instrument descriptions

The following section describes the instruments applied in the current study and includes: description of instrument, adaptation, validity and reliability.

4.1 Personal information sheet

The purpose of the Personal information sheet was to collect information regarding personal and social background. The purpose of the Personal information sheet was to collect information regarding personal and social background. This form comprised of items concerning age, gender, religion, marital status, educational level, income, previous MI history, number of co-morbidity, patient living arrangement, and mode of arrival to ER.

4.2 Response to Symptom Questionnaire

The Response to Symptoms Questionnaire (RSQ) was developed by investigators in the Thrombolysis in AMI Trial to gather data to assist in distinguishing between early and late responders to symptoms of AMI. 18 items

examined six domains, however, in this study use 3 domains are includes: (a) behavioral response to symptom, (b) affective (emotional) response to symptom, and (c) cognitive response to symptoms (Burnett et al., 1995). Context included day of week, time of day, location, and presence of others. Level of activity at the time of symptom onset, anticipation of the symptom occurring, and degree of emotional stress comprised the domain antecedents. Type of action taken by the patient, emotion-focused or problem-focused coping strategies, and ease of contacting the physician and transportation to the hospital constituted the behavioral response. *Emotional response to symptom* consisted of extent of anxiety, comfort in seeking medical care. The *severity of symptom* represented the severity of pain. The fifth domain, *cognitive illness representation* to symptoms, was composed of cognitive illness representation variable that had five construct observe variable includes; perceive cause of the symptom, identity or label the health threat, perceive consequence, ability to control the symptom, and timeline as the acute or chronic condition. The final domain categorized the responses of others into two categories, instrumental or palliative.

The RSQ consists of two types of items: multiple-choice questions that require a response, including “other” as an option, and items utilizing a Likert scale. Participants are also asked to identify the date and time when the symptoms were first noticed, to rate their pain on zero to ten pain scale, and to identify any prior knowledge of “clot buster” medications to stop a heart attack. One item was added by Reilly et al. (1994) to identify which, if any, member was present at the time of symptom onset. Future additions was made to the RSQ to gain information about cognitive, symptom appraisal and social factors that surround a person’s decision to seek treatment when experiencing symptoms suggestive of AMI (Dracup et al., 1997).

In this study, RSQ was refined for measured 4 major variables that include; severity of the symptom, cognitive illness representation, emotional response to symptom, and delay time to seek treatment. However, this instrument was never been separate to the five construct variable in cognitive illness representation and one for emotional response to symptom, for this reason this study used a principle component factor analysis was used to determine which of 10 cognitive and emotional response items were clustered together (See Table 3.3). A six-factor solution emerged using a varimax rotation. The response of “You did not know the symptoms of a heart attack” and “You did not realize the importance of your symptoms” load onto the first factor and accounted for approximately 16.13% of variance. The first factor represented perception of *cause of the illness*. The response of “You did not recognize your symptoms as heart symptoms” and “Important of someone who is having heart symptoms to come to hospital” loaded onto the second factor of *Identity dimension* and accounted for 14.19% of variance. The response of “You anxious were you symptom when you first noticed them” and “You were embarrassed to get help”, loaded onto the third factor represented *emotional response to s*ymptom and accounted for 13.79% of variance. The response of “Fear what might happen” and “You did not want to trouble anyone”, loaded onto the fourth factor represented *fear of the consequence* and accounted for 12.54% of variance. The response of “You wait to see if symptoms would go away” and “Your symptom came and went”, loaded onto the fifth factor represented *perceive a timeline of the illness* and accounted for 12.43% of variance. The response of “You have ability to control your symptom”, loaded onto the lasted factor represented *perceive the controllability of the illness* and accounted for 9.39% of variance.

For the purposes of the study, only three of the above domains were use to the SEM analysis.

First, to assess the *severity of symptom,* the single item (emotional or affective response to symptoms from the RSQ questionnaire) was used “on a scale of 0 to 10 with 0 being no pain and 10 being the worst pain you have ever felt, the discomfort or pain that you had was” Responses to this item pain numeric rating scale (NRS) was applied to collected this variable.

Second, *the cognitive illness representation* (CIR), nine items were used as follow; “You did not know the symptoms of a heart attack” and “You did not realize the importance of your symptoms” represented the cause variable. Then, “You did not recognize your symptoms as heart symptoms” and “Important of someone who is having heart symptoms to come to hospital” represented the second observe variable of CIR was *Identity dimension*. Next, you did not recognize your symptoms as heart symptoms” and “Important of someone who is having heart symptoms to come to hospital” represented the *Identity dimension*. Next, “Fear what might happen” and “You did not want to trouble anyone”, represented the fourth observe variable of CIR, that represented *fear of the consequence*. Then, “You wait to see if symptoms would go away” and “Your symptom came and went”, represented perceive *a timeline of the illness*.

The last variable was *perception of controllability*, response by “You have ability to control your symptom”(Table 3.3). the overall of CIR latent variable responses to this item are a 5-point Likert-scale and included, not at all, mildly, moderately, very and extremely, with 1 (not at all) and 5 (extremely), and enter

directly. The higher the score, patients had the late of symptom attribution and interpretation to the heart disease related, were the CIR, enter code directly.

The third, to assess *emotional response to symptom***,** response to the item **"**You anxious were you symptom when you first noticed them" and "You were embarrassed to get help", represent anxiety and fell to comfort to seek treatment**,** higher score that represents patients more distress with emotional reaction after AMI symptom, enter code directly.

The last is *appraisal of symptoms seriousness*, the single item (emotional or affective response to symptoms from the RSQ questionnaire) was used "When you first notice your symptoms, how serious did you think they were?" Responses to this item are a 5-point Likert-scale and included, not at all, mildly, moderately, very and extremely, with 1 (not at all) and 5 (extremely). The higher the score, the more serious is the appraisal of symptoms. Enter code directly.

Table 3.3 Factor loading in Principle component Analysis with Varimax rotation (n=160)

Cognitive and Emotional response in RSQ	Component					
	Cause	**Identity**	**ER**	**CSQ**	**Timeline**	**Control**
You did not know the symptoms of a heart attack.	**.730**	-.139	.246	-.206	-.142	-.244
You did not realize the importance of your symptoms	**.839**	.184	.120	.088	.062	.223
You did not recognize your symptoms as heart symptoms	.304	**.768**	.253	-.014	.099	-.031
Important of someone who is having heart symptoms to come to hospital	.330	**.526**	.059	.267	.145	-.120
You anxious were you symptom when you first noticed them	.073	.073	**.737**	-.045	.113	.130
You were embarrassed to get help	-.035	-.006	**.605**	.356	.044	.266
Fear what might happen	.103	.121	.025	**.907**	.049	.058
You did not want to trouble anyone	.002	.435	-.076	**.727**	.059	.173
You wait to see if symptoms would go away	.356	-.055	.134	.127	**.716**	.002
Your symptom came and went	.168	.362	.194	.020	**.527**	.075
You have ability to control your symptom	.139	.335	.038	.087	.118	**.927**

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a Rotation converged in 7 iterations.

Validity and reliability

The RSQ has test-retest reliability was evaluate for the modify RSQ, and yield an interclass correlation of > .85 for all items (P < .05) (Dracup and Moser, 2000). Content validity of the modify RSQ was validated by master's and doctoral prepared nurses and physicians (Dracup and Moser, 2000).

Following completion of data collection, internal consistency of RSQ was examined via Cronbach alpha. The reliability of the original 11-item questionnaire was borderline, as indicated by a Cronbach alpha of 0.74

4.3. The Coping with Heart Attack Symptom Scale (CHASS)

Alternative Coping Strategies are defined here as cognitive, emotional, and behavioral responses that are included response to one's illness representation that do not involve the seeking of medical treatment. These might include either problem-focused strategies, which are used to manage or change the stress, or emotion-focused strategies, such as denial, fear, distraction, and suppression, that are directed toward decreasing emotional distress (Lyon, 2000). The emotional focused coping aimed at ignoring or denying the significance of symptoms and the problem-focused coping strategies had the aim for problem-solving activities such as those aimed at symptom relief reflect by 10 items of CHASS.

In this study, alternative coping strategies were measured using 15 items that were deemed to indicators of coping strategies that individuals may employ in response to AMI symptoms (Fox-Wasylyhyn, 2005).

Psychometric testing of the CHASS, the completed instrument was reviewed for content validity by five experts: a cardiac nurse educator, a cardiac nurse practitioner, and three nurse scholars who have published on the topic of AMI treatment-seeking delay. The instrument was deemed to have good content validity as evidenced by a content validity index of 0.813 (Fox-Wasylyhyn, 2005).

Analysis of the pilot data that included all 15 CHASS items revealed test-retest reliability of $r = 0.92$ ($p < .001$). When the data were re-analyzed with the 15 items that constituted the final version of the CHASS, the test-retest reliability improved ($r = 0.98$, $p < .001$). Factors analysis and internal consistency testing suggest that five of the coping strategies were reflective of a single concept, deemed to be emotion-focused coping and the 10 items to be indicative of problem-focused coping.

Following completion of data collection, internal consistency of the CHASS was examined via Cronbach alpha. The reliability of the original 15-item questionnaire was borderline as indicated by a Cronbach alpha of 0.87.

Scoring of the CHASS. Responses to individual items ranged from 1 – 5, with a score of zero indicating no use of the coping strategy reflected by the item and a score of four reflecting the highest use of that strategy. The overall score for the CHASS was calculated by summing the values of its five individual items. Therefore, scores on the CHASS could range from 5-25 for emotional focused coping and 5-50 for the problems focused coping strategies.

4.4 Delay to seek treatment

Delay to seek treatment was defined as the range of time in hour and minutes from the onset of signs and symptoms until arrive at hospital. It was ascertain by subjects' identification of the time at which symptoms were first notice, and the time at arrive at hospital. Delay to seek treatment will be measured before 72 hour after AMI symptom onset. Answers to these question participants were recollection with the time was symptom occurs and verified through a review of the patients' medical records and used the Benchmark technique for confirm the accurate of time. When discrepancy was found between what participants said. A longer of time equal and more than 2 hours indicated that patients delay to seek treatment (ACC/AHA, 2004). This was done from a clinical interest because at the time of this study the evidence indicated that this was the critical cutoff point for maximum effective for any interventions (GISSI, 1986). Responses to these questions were recorded on the 3-item in the RSQ. Test-retest reliability of time-to-treatment as calculated from the RSQ at time 1 and time 2 revealed a perfect correlation ($r = 1.00$; $p < .001$). (i.e. time to heart attack begin to time to decide to go to hospital, and to time to arrived at ER).

A confirmatory of delay to seek treatment will obtained during the interview with the patient before 72 hour after admission, by asking them to estimate the time delay between first experiencing symptoms and attending the hospital (Previous research has demonstrated high correlations between doctor's and patients' estimate of delay times) and confirm with the review from OPD card on time to definite at hospital arrival.

Protection of human subjects

This proposal was approved by the Human Research Board of the potential settings. There were at the Faculty of Medicine, Chulalongkorn University, Mahidol University, Phramongkutklao Hospital, Police General Hospital, and Rajvithi Hospital Institutional Review Board (IRB) was granted permission obtained before the start of data collection. At the cardiac care ward, the nurse staff introduced the research program to potential participant and asked for their permission to introduce them an investigator.

The participants were informed of purpose of the study and their rights to refuse participation. If the participants did not want to answer the questionnaires, they can withdraw from the study at any time without penalty. Their names were not addressed in the data; a code number was used to ensure confidentiality. There was no harm to the participants in this study. There was neither cost nor any payment to participants in the study. However, after completing the questionnaire, each participant received a key ring or a pen with Chulalongkorn University emblem in appreciation for their participation Therefore, no participants who with draw form this study.

Pilot study

The pilot study was carried out in October 2007. The aims of the pilot study were; to assess the feasibility of using the proposed instruments, to assess psychometric properties, and to evaluate data-collection procedures. It provided an opportunity to test the instructions and the translated instruments including RSQ and CHASS. These two instruments were used for the first time in AMI Thai patients.

After obtaining ethical approval from the IRB, Khon Kaen Hospital, consent was obtained from the directors of Cardiac Care Unit, in Khon Kaen Hospital, to conduct the pilot study. Participants were AMI patients who met the following inclusion criteria. Convenience sampling was employed to recruit a sample of 30 AMI patients from setting. After the participants were identified, the investigator explained the objectives of the study. They were informed of their rights; if participants agreed participate in the pilot study, they would be asked to sign a consent form. The participants were then asked to complete the questionnaire and to evaluate the clarity and appropriateness of the questions. The investigator recorded the time spent to complete the questionnaires, administration issues associated with the questionnaire and suggested improvements. Each participant was given a key ring or a pen with Chulalongkorn University emblem in appreciation for their participation.

Inferential statistics were used to determine the reliability of the instrument. Data was analyzed using the statistical package. Alpha was set at .05 for significance. The RSQ and CHASS instruments were assessed for internal consistency using the Cronbach's alpha reliability coefficient.

Psychometric properties of all the instruments had acceptable scores. The reliability coefficients of all scales ranged from 0.72 to 0.77 as shows in table 3.4 The CHASS measurement had the highest reliability (α =.77). Moreover, results of the pilot study demonstrated that respondents took between 20 to 30 minutes to complete the questionnaire. The measurements were culturally appropriate for AMI Thai patients and the procedures were followed without any issues

Table 3.4 Psychometric properties of the instruments used in the pilot and main study

Instruments	Items No.	Coefficient alpha	
		The pilot study (N=20)	The main study (N=160)
Response to symptom questionnaire	11	.72	.74
Coping with Heart Attack Symptom Scale	15	.77	.86

Prior to gathering data, five research assistants, nursing master degree graduates or nurse who had experience more than 5 year in coronary care unit with previous research experiences had been trained by training material and benchmark technique for completing the time intervals questionnaire to interview participants who met the criteria (Appendix H). The research assistants were instructed and examined to confirm their understanding of sample criteria, the definition, and concept base of each questionnaire until a satisfactory level had been reached on the discretion of the investigator. Each research assistant and the investigator interviewed 5 samples and the inter-rater reliability assessed. The agreement between the research assistants and the investigator ranged from 75-90%, with an average agreement of 86%.

Data collection

Data were gathered during January 2008 to December 2008. Data were only collected after obtaining approval from the IRB at faculty of medicine, Chulalongkorn University and IRB from hospital and University related. The following describes the data collection procedures for this study

1.The investigator conducted a pilot study to test the reliability of the proposed instruments with 20 AMI patients in CCU, Khon Kaen Hospital, Thailand. The detail was described in the pilot study section of this study.

2. A letter asking for the permission to collect the data from the Faculty of Nursing, Chulalongkorn University was sent to the directors and the Institutional Review Board (IRB) committee of five hospitals (research settings).

3. After permission from the IRB will approve, the researcher made appointments with doctors and nurses of Medical Ward, CCU or ICU in each hospital and informed them about the objectives, process of the study and ask for cooperation.

4. The researcher and research assistants study personal records of AMI patients, who have appointments with physicians at medical in-patient ward each day. There were about 1 to 2 AMI patients each day in each setting. Then, the researcher and research assistants study patients' medical diagnosis and medical record for symptom, RSQ, and CHASS of AMI patients.

5. The researcher and/or research assistants selected participants by random selection congruence with the inclusion criteria. All selected participants agreed to participate in this study.

6. The participants were given a clear explanation about the study objectives, process of the study and the right to participate in the study.

7. The participants were asked to sign the informed consent form before data collection.

8. The participants were asked to complete the questionnaires. It took about 20-30 minutes for each participant to complete all questionnaires. For older participants, the researcher sometimes had to read the questionnaires and ask them for their responses.

9 The researcher and research assistants examined the questionnaires for completeness of the data. Participants were asked to answer any missing items. Thus, there is no missing data in this study.

10. After completing the questionnaire, each participant received a key ring or a pen with Chulalongkorn University emblem in appreciation for their participation. Thus, data from 160 participants were collected and used in this study.

Data analysis

Data analysis included the application of descriptive and inferential statistics. Descriptive statistics (i.e. frequency, percentage, range, mean, and standard deviation) were applied to delineate characteristics of the sample, and examine the distribution of demographic variables and the variables of interest in this study using the Statistical Package of the Social Science for Personal Computer (SPSS/PC) version 15. LISREL 8.52, a structural equation modeling program, was used to answer research questions. An alpha level of .05 was selected as the accepted level of significance for this study. The processes used for data analysis are described in the following section.

1. Preparation of data for analysis: Missing data and outlier were determined to prevent compromised analytic power and non-response bias by the researcher. The data was cleansed to prevent random and systematic errors (e.g. typing or coding the wrong value) using descriptive statistics (Roberts et al., 1997). A total of 160 questionnaires were selected for the accuracy of data entry.

2. The sample characteristics of the sample were analyzed by descriptive statistics.

3. The assumptions underlying multivariate analysis for the structural equation modeling were tested, including normality, homocedasticity, the linearity of relationship and multicollinearity.

4. The measurement model was evaluated to verify that the theoretical constructs were accurately represented by observed variables using confirmatory factor analysis. Separate measurement models were tested for each latent variable. According to Joreskog and Sorbom (1996), there are two methods to assess the measurement model, overall fit and measurement model fit. The overall model fit is indicated by chi-square value (χ^2), relative or normed χ^2 (χ^2/df) and goodness of fit indices. The nonsignificant χ^2 means that there is no difference between the observed matrix and that predicted by the proposed model. If the goodness of fit index (GFI) and adjusted goodness of fit index (AGFI) are greater than 0.9, the root mean square residual (RMR) are close to zero (Hair et al., 1998) and normed χ^2 is less than 2 (Pedhazur and Schmelkin, 1991) indicating a good fit. For measurement model fit, the observed variable loading related to the construct and the relationship among indicators and the construct were examined. The square multiple correlation (R^2),

which is the proportion of variance in the observed variable that is accounted for by the latent variables for which it is an indicator, were examined.

5. Once it was determined that the measurement model fit the data, the hypothesized model was then analyzed. In the proposed model there were one exogenous variable (severity of symptom) and five endogenous variables (cognitive illness representation, emotional response to symptom, alternative coping strategies, appraisal symptom seriousness, and delay to seek treatment). In this step, path coefficient and R^2 were estimated and the effects of the independent variable on dependent variables were determined to answer the research questions and test the hypotheses. The goodness-fit-indices were used to determine whether the model adequately fit the data.

Summary

A correlational, cross-sectional research design was used to test a proposed model of delay in seeking treatment in Thai patients with AMI symptoms and explore relationships among variables including severity of symptom, cognitive illness representation, emotional response to symptom, appraisal symptom seriousness, alternative coping strategies, and delay to seek treatment in Thai AMI patients. The population of this study included Thai patients suffering from AMI, 20 years and over, who admit in Medical Department, CCU, and ICU of tertiary level Hospital or University Hospital in Bangkok. Stratified random sampling was employed to obtain a sample of 160 subjects. Three self-report instruments were used to collect the data. Data were analyzed by using the maximum likelihood method run by the LISREL program.

CHAPTER IV

RESULTS

The findings were reported in four sections. Firstly, demographic and medical characteristics of the participants were presented. Secondly, descriptive characteristics of study variables were explained. Then, preliminary analysis was described. Finally, hypothesized model and modified model of delay time to seek treatment model among Acute Myocardial Infarction (AMI) patients were addressed were described.

Characteristics of the Sample

Off the 160 cases who had delay to seeking treatment (more than 2 hours) that recruited to this analysis. The age of 160 participants ranged from 31 to 85 years with a mean of 61.37 years (SD = 12.92). Most patients were male (65.6%, n = 105), were married (73.1%, n = 117), and were Buddhist (97.5%, n = 156). Nearly half of the subjects had an elementary school (41.3%, n = 66). About fifty four percent (54.4%, n = 87) had income lower than 10,000 Bath/ month and they had several financial supports for health care service such as government support (48.8%, n = 78), 30-Baht scheme (40.6%, n = 65) and social security insurance (8.8%, n = 14), respectively. Demographics characteristics are summarized in Table 4.1

Table 4.1 Demographic Characteristics of the Sample (N = 160)

Demographic Characteristics	Number	Percentage
Age (31-85) Mean 61.37 (SD = 12.92)		
≤ 60	83	51.9
> 60	77	48.1
Gender		
Male	105	65.6
Female	55	34.4
Religion		
Buddhism	156	97.5
Muslim	4	2.5
Present marital Status		
Single	13	8.1
Married	117	73.1
Separated, Divorced, Widowed	24	15.0
Other	6	3.8
Income		
≤ 10,000 Bath/mount	87	54.4
> 10,001-20,000 Bath/mount	38	23.8
> 20,001-30,000 Bath/mount	20	12.5
> 30,001	15	9.3
Payment		
Government Support	78	48.8
Universal Coverage (30 Baht Scheme)	65	40.7
Social Security Insurance	14	8.8
Self	3	1.9
Education		
None	17	10.6
Primary School	66	41.3
High School	35	21.9
Diploma Degree	14	8.8
Bachelor Degree	19	11.9
Other	9	5.6

The most frequent reported symptom was chest pain (84.3%), followed by dyspnea (44.6%), then sweating (41.2%), nausea and vomiting (23.5%), arm pain (20.6%), and epigastric discomfort (14.7%); less than 10% reported other symptoms. About fifty four percent (54.4%) patients had attribution of symptom to the heart related, followed reported symptom occurred related to stomach (15.60%), muscle pain (6.34%), and fatigue (6.34%). On the Context facto, most participants reported that AMI symptoms first appeared while they were at home (73.80%), if not at home, symptoms first appeared in a variety of locations, the most frequent being at work (10.60%).

On the response of others to patient symptoms: Participants indicated the person who was with them when they experienced symptoms and how other people responded to symptoms. Participants were most often with a spouse or partner (43.10%) or another family member (30.60%). When not with family, participants reported that they were with people at work or friends (13.8%), and they were alone (12.5%). When others heard about symptoms, common responses were to get the participant medical help, took them to the hospital, and call for Emergency Medical Service (73.1%). Others reported that the other person tried to comfort them, or got very upset; they never told anyone about their symptoms (26.9%)

On the knowledge of rapidly to seek treatment for receive thrombolytic or balloon procedure therapy, surprisingly, 61.0% (n=98) of participants reported never heard fribrinolytic drugs and Balloon surgery for treated of heart disease (46.9%), respectively.

Table 4.2 Characteristics of the Sample (N = 160)

Characteristics	Number	Percentage
Family History of CAD		
Yes	38	23.75
No	122	76.25
Symptom Presentation**		
Chest Pain and chest discomfort	135	84.30
Dyspnea	71	44.60
Sweating	66	41.20
Nausea and vomiting	38	23.50
Arm pain	33	20.60
Epigastric discomfort	24	14.70
Other symptoms	16	10.00
Setting where symptoms occurred		
Home	118	73.80
Work	17	10.60
Outside home (Car, Road, public park, etc.)	25	15.60
Witness to symptom onset		
Alone	20	12.50
Spouse, couple, partner	69	43.10
Family member	49	30.60
Care giver, Coworker, friend, etc..	23	13.80
Response of others to symptom onset		
Suggested seeking help or called for help	117	73.10
Other behavior (rest or take medication, told not worry, got upset, never told anyone about your symptom etc.)	43	26.90
Symptom attribution		
• Heart	87	54.40
• Stomach	25	15.60
• Muscle pain	10	6.30
• Fatigue	10	6.30
• Flu, dental problem, etc..	28	22.90
Had knowledge of rapid response to MI symptoms with Thrombolytic therapy		
Yes	62	38.80
No	98	61.20
Had knowledge of rapid response to MI symptoms with Balloon procedure		
Yes	85	53.10
No	75	46.90

** Patients may exhibit multiple symptom presentation

Medical Characteristics of the sample

The most proportion of the subjects (24.38%, n = 39) were recruited from Rajvithi Hospital, follow with Siriraj Hospital (22.50%, n = 36) while the rest were recruited from three others hospital; the Phramongkutklao Hospital (18.20%, n = 29), King Chulalongkorn Memorial Hospital (17.50%, n = 28), and Police General Hospital (17.50%, n = 28). Mostl patients (82.50%, n = 132) had both uncontrollable and controllable risk factors. Nearly quarter of patients (23.75%) had a family history of cardiovascular disease. About 43.75% of patients currently smoked cigarettes, and 23.12% (n = 37) of patients had history of myocardial infarction**.** In terms of risk factors, about a half (51.25%) of participants also had hypertension (n = 82), dyslipidemia (45%, n =72), diabetic mellitus (23.75%, n = 38), leaving without these risk factors (17.50%, n = 28)**,** respectively as show in table 4.2

Table 4.3 Medical Characteristics of the Sample (N = 160)

Characteristics	Number	Percentage
History of Myocardial Infarction		
Yes	37	23.12
No	123	76.88
Smoking History		
Non Smoking	90	56.25
Currently smoking	70	43.75
Comorbidity*		
None	28	17.50
Diabetics	38	23.75
Hypertension	82	51.25
Dyslipidemia	72	45.00
Other (Gout, COPD, CKD, Asthma, Cancer, HNP)	19	11.88

*Patients may exhibit multiple comorbidity

More than half of the subjects (56.25%), n = 90) were diagnosed with ST elevated myocardial infarction (STEMI). Patients who diagnosed with STEMI (21.25%, n = 34) received thrombolytic therapy equally with patients who received emergency cardiac catherization. In addition, about 5.62% of patient with STEMI (n = 9) and only 5 patients with STEMI who not received special treatment because the longer of delay time more than 12 hour and older age of patients. On Non-ST elevation myocardial infarction (NSTEMI), most of NSTEMI patients (43, n = 26.88%) received low molecular weight heparin (LMWH). Some patients manifested complications, including arrhythmias (22.50%, n =36), heart failure (20.00%, n =32), upper gastrointestinal bleeding (UGIB) (4.38%, n =7), and stroke (3.12%, n =5). However, more than haft of the subjects (53.75%, n =86) had no complications in the hospital as show in Table 4.3

Table 4.3 Medical characteristics of the sample (n = 160)

Medical Characteristics	Diagnosis		Total
	STEMI (n = 90, 56.25%)	NSTEMI (n = 70, 43.75%)	
Receiving Treatment			
Thrombolytic Therapy	34	6	40 (25.00%)
Emergency Caterization	34	9	42 (26.25%)
Primary PCI	9	4	13 (8.13%)
LMWH (Claxane, Enoxaparin)	8	43	51 (31.88%)
No specifics treatment	5	8	13 (8.12%)
Complication in Hospital*			
None	53	43	86 (53.75%)
Heart Failure	19	13	32 (20.00%)
Arrhythmia	28	8	36 (22.50%)
Stroke	3	2	5 (3.12%)
UGIB	4	3	7 (4.38%)
Other (VT, VF, SVT)	2	1	3 (1.88%)

* Patients may exhibit multiple complications

Descriptive of Characteristics of Study variables

The average peak of symptoms severity experienced by the sample was 6.93 (SD =2.22) that can interpreted to the moderate pain, with 53.7% rating them at 4-7 (Table 4.2). In addition patients also had a positive perception about illness representation in all subscales include illness identity, timeline, consequence, controllability, and perceive potential cause (mean = 2.50-6.86, S.D.= 0.87-2.90), mean that patients with AMI symptom in this study had moderate to identity of symptom (Mean=6.25), had intermittent timeline (Mean=5.30), fear moderate of the consequence of illness(Mean=6.85), perceive medium to controllability (Mean=2.50), and moderate to identify potential cause to the heart related (Mean=5.60). Other variables, problems-focused and emotional-focused coping strategies of patients with AMI after compare the score of Coping with Heart Attack Symptom Scale, it was revealed that patients used both problem-focused coping and emotional focused coping strategies moderately (mean=25.64 and 11.62, respectively), though they used more problems focused coping strategies than emotional focused coping strategies (mean = 25.64; SD = 11.41; mean 11.62, SD = 5.12, respectively). In addition, an emotional response to symptom had moderate to high level that patients was response to symptom (mean 6.10, SD 1.83) as showed the moderated to high anxiety with this symptom began. On patients appraisal symptom seriousness had the mean score 3.51, that showed the moderated to high participants appraisal with AMI symptom that seriousness.

The last variable was delay to seek treatment, the average time of patients delay was 6 hour 54 minute (median = 6 hour 8 minutes, SD = 4.36), interestingly, 76 AMI patients who delay more than 6 hour to seek treatment, the mean time from the onset of AMI symptoms to decision to seek treatment attention was 3 hour 29 minute (SD. 6.37) and the transportation from the decision to seek treatment to time arrival at the emergency room was 4 hour7 minute (SD. 5.23), respectively, show in Table 4.4

Table 4.4 Descriptive statistics for study variables (n=160)

Variables	Possible range	Actual range	Mean	SD	Skewness (SE)	Kurtosis (SE)
Severity of Symptom	0-10	0-10	6.93	2.88	-0.81 (0.19)	-0.24 (0.38)
Mild (15.0%, n=24) Moderate(53.7%, n=86) Severe (31.3%, n=51)						
Cognitive Illness Representation						
Illness Identity	2-10	2-10	6.25	2.90	-0.69 (0.19)	-0.56 (0.38)
Timeline	2-10	2-10	5.30	2.25	-0.66 (0.19)	-0.17 (0.38)
Consequences	2-10	2-10	6.85	1.82	-0.78 (0.19)	-0.09 (0.38)
Controllability	1-5	1-5	2.50	0.87	0.32 (0.19)	-0.38 (0.38)
Potential cause	2-10	2-10	5.60	2.75	-0.66 (0.19)	-0.75 (0.38)
Emotion response to symptom	2-10	2-10	6.10	1.83	-0.78 (0.19)	-0.09 (0.38)
Alternative Coping Strategies						
Problems-focus coping	10-50	10-46	25.64	11.41	0.317 (0.19)	-0.30 (0.38)
Emotional focus coping	5-25	5-25	11.41	5.12	-0.79 (0.18)	-0.36 (0.38)
Appraisal Symptoms as Seriousness	1-5	1-5	3.51	1.16	-0.43 (0.19)	-0.65 (0.38)
Delay Time to Seek Treatment (median 6.125)	2-24	2.00-23	6.94	4.36	1.29 (0.19)	-0.61 (0.38)
Decision time to seek treatment		30 min-20 hours	3.17	6.37	1.45 (0.19)	-0.84 (0.38)
Transportation time		50 min.-7 hr 30 min.	4.05	5.23	0.89 (0.19)	-0.57 (0.38)

Research Hypotheses Testing

Preliminary Analyses

Prior to further analysis, all study variables including severity of symptom, cognitive illness representations, emotional response to symptom, alternative coping strategies, and delay to seek treatment were examined under general statistic assumption for multivariate analysis including normality, linearity, and multicollinearity.

Normality Testing of the Variables

As show in table 4.5, Multivariate normality was tested in all variables by statistical and graphical methods. Two components of normality, skewness and kurtosis, were explored. The skewness values of all variables in this study ranged from -0.43 to 1.29 and the kurtosis of all variables ranged from -1.43 to -0.27 (Table 4.5). According to West, Finch and Curran, (1995), the high of non-normal are 3.00 for skewness and 21.00 for kurtosis. Hair, Black, et al., (2006) suggested the skewness and kurtosis values above $\pm$2.58 provides non-normal distributions which would underestimate the standard error and result in untrustworthy data output. Thus, the value of skewness and kurtosis of this study were not “highly non normal”. Furthermore, normal probability data plot indicated the normal distribution. Therefore, it was acceptable for SEM analysis.

Table 4.5 Normality of the variables in the study

Variables	Mean	SD	Skewness	Kurtosis
Delay Time to Seek Treatment (Hour)				
Delayer (> 2 hours)	6.94	4.36	1.29	-0.61
Cognitive Illness Representation				
• Identity	3.13	2.90	-0.12	-1.43
• Timeline	2.80	2.25	0.13	-0.98
• Consequence	3.43	1.82	-0.43	-0.64
• Control/cure	2.50	0.87	0.31	-0.30
• Cause	2.80	2.75	0.09	-1.36
Alternative Coping Strategies				
- Emotional Representation	2.34	0.91	0.62	-0.27
- Problem-focused coping strategies	3.39	0.97	-0.63	-0.76
Emotional-Response to symptom	3.05	1.07	-0.12	-0.98
Appraisal of symptom as seriousness	3.51	1..16	-0.43	-0.65

Multicollinearity

Bivariate multicollinearity was checked by examining the correlation matrix among individual variables included in the analysis. Bivariate multicollinearity occurs when correlations of any variables is greater than ± 0.85 (Munro & Page, 1993, p.215). In addition, Multivariate multicollinearity occurs when the tolerance values are less than 0.01, the variance inflation factor (VIF) values are greater than 5.3, or the condition index is greater than 30 for two or more coefficients in the same dimension with a value greater than .90 (Hair et. al, 2006; p 227). Evidence of multicollinearity was not found, with correlations coefficients among the predictor variables ranging from – 0.69 to 0.60 (Table 4.6), tolerance values from 0.55 to 0.72, and VIF values ranging from 1.37 to 1.80 (Table 4.7). The tolerance and VIF values indicated no

evidence of multicollinearity. In addition, the threshold value of condition indices for severity of symptom was slightly higher than 30 (32.33) and the proportion of variance was 1.00. These findings indicated that there was mild multicolinearity between study variables, but and all proportional variance of coefficient in the same dimension were less than .90 (.82) (Table 4.8). However, when using SEM analysis, there was no warnings massage that the covariance matrix was singular, indicating that the studies variables was not extremely highly correlated (Tabachnick & Findell, 2001).

Table 4.6 Correlations Matrix among the study variables (N = 160)

	TimeHr	ASS	PFCS	EFCS	IDEN	TL	Cause	CSQ	Ctl.	ER	SS
TimeHr	1										
ASS	-.560(**)	1									
PFCS	.406(**)	-.341(**)	1								
EFCS	.451(**)	-.364(**)	.252(**)	1							
IDEN	.578(**)	-.243(**)	.220(**)	.214(**)	1						
TL	.496(**)	-.482(**)	.203(**)	.234(**)	.218(**)	1					
Cause	.530(**)	-.437(**)	.047	.243(**)	.401(**)	.400(**)	1				
CSQ	.600(**)	-.306(**)	.356(**)	.216(**)	.452(**)	.345(**)	.331(**)	1			
Ctl.	.533(**)	-.419(**)	.187(*)	.290(**)	.252(**)	.356(**)	.463(**)	.353(**)	1		
ER	-.145 ns	.143 ns	.093 ns	.124 ns	-.031 ns	-.264(**)	-.101 ns	-.129 ns	-.146 ns	1	
SS	-.694(**)	.423(**)	-.241(**)	-.372(**)	-.311(**)	-.402(**)	-.363(**)	-.405(**)	-.324(**)	.364(**)	1

ns=snosignificants *p<.05, **p<.01

Note:

SS	= Severity of Symptom	Ctl.	= Controllability
IDEN	= Illness Identity	ER	= Emotional Response to symptom
TL	= Timeline	PFCS	= Problems-focused coping
CSQ	= Consequences	EFCS	= Emotional-focused coping
ASS	= Appraisal symptom as seriousness	TimeHr	= Delay to seek treatment ≥ 2 Hour

Table 4.7 Assessment for multicollinearity among the predicting variables (n=160)

Variables	Tolerance	Variance Inflation Factor (VIF)
• Severity of Symptom	.555	1.803
• Illness Identity	.703	1.422
• Timeline	.652	1.533
• Consequences	.580	1.724
• Cause	.627	1.596
• Controllability	.656	1.525
• Emotional Response to symptom	.655	1.527
• Problems-focused coping	.713	1.403
• Emotional response to symptom	.726	1.377
• Appraisal symptom as seriousness	.576	1.735

Table 4.8 Variance Proportion of Study Variables

Dimen-sion	Eigen-value	Condition Index	Variance Proportions										
			(Constant)	ASS	PFCS	EFCS	IDEN	TL	Cause	CSQ	Ctl.	ER	SS
1	9.758	1.000	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.436	4.733	.00	.03	.00	.01	.02	.02	.04	.00	.00	.02	.06
3	.183	7.308	.00	.01	.34	.07	.02	.00	.18	.00	.00	.01	.01
4	.149	8.081	.00	.00	.01	.04	.62	.12	.01	.00	.02	.00	.00
5	.131	8.620	.00	.00	.11	.39	.00	.14	.03	.01	.00	.09	.01
6	.100	9.863	.00	.09	.18	.16	.04	.07	.29	.01	.00	.09	.04
7	.079	11.083	.00	.07	.03	.00	.08	.43	.01	.02	.28	.12	.04
8	.065	12.257	.00	.18	.05	.00	.12	.00	.29	.01	.40	.01	.22
9	.051	13.787	.00	.00	.11	.24	.01	.03	.12	.03	.13	.66	.38
10	.038	16.028	.00	.16	.12	.01	.09	.06	.00	.82	.10	.00	.07
11	.009	**32.232**	1.00	.45	.05	.09	.00	.13	.04	.10	.06	.01	.17

Note:

SS = Severity of Symptom
ASS = Appraisal symptom as seriousness
IDEN = Illness Identity
TL = Timeline
CSQ = Consequences
Ctl. = Controllability
ER = Emotional Response to symptom
PFCS = Problems-focused coping
EFCS = Emotional-focused coping

Homoscedasticity and linearity.

Residuals scatter plots were evaluated to assess homoscedasticity and linearity (Munro & Page, 1993, p.216). The residual pattern did not deviate from a horizontal band; the spread was equivalent across the zero axis within $\pm$2 standard deviations, which indicated a homoscedasticity and linear relationship. This assumption was therefore reasonably accepted (Appendix. G)

Principal analysis

The following section illustrates data analysis procedures. LISREL 8.52 was used to perform the structural equation modeling (SEM) analysis and the finding and the findings of this analysis were used to test the studied hypotheses. This analysis consists of two steps: measurement model testing and structural or theoretical model testing, the model and hypotheses testing are described below.

1) Measurement Model testing

The model of delay to seeking treatment was tested using a two-step approach: the measurement model and the structural equation model. The measurement model was tested first followed by the structural equation model.

1.1 Assessment of measurement models

The measurement model determines how latent variables or construct are indicated by the observed variables or indicators. In this study, 2 concept constructs were evaluated including cognitive illness representation and alternatives coping strategies in order to specify reliability and construct validity using confirmatory factor analysis (CFA). This section presents the fit indices of the measurement models

along with the reliability (R^2) and standardized validity coefficient (λ^s) using confirmation factor analysis.

The results of CFA revealed that the two measurement models had good overall model fit (Table 4.9). The second-order CFA showed that all measurements had low Chi-square values resulting in non-significant difference level of 0.05. The χ^2/df ratio fell within the recommended level of 2, with both GFI and AGFI values close to 1.00 and equal to 1.00 respectively. The RMSEA values ranged from 0.028 to 0.079, indicating a validity of measurement constructs (Confirmatory factor analysis of the measurement models are presented in Appendix H).

Table 4.9 Statistical Overall Fitted Index Values of measurement models (n=160)

Construct	χ^2	df	χ^2/df	p-value	GFI	AGFI	RMSEA
CIR-DLT							
-Original model	83.11	35	2.37	0.00	0.93	0.90	0.079
-Revised model	34.15	29	1.17	0.21	0.97	0.99	0.028
Coping-DLT							
-Original model	622.38	90	6.91	0.00	0.66	0.54	0.193
-Revised model	65.09	49	1.32	0.21	0.95	0.87	0.045

Note:

GFI = Goodness of fit index

AGFI = Adjusted goodness of fit index

RMSEA = Root mean square error of approximation

CIR-DLT = Cognitive Illness Representation for Delay to Seek Treatment

Coping-DLT = Alternative Coping Strategies for Delay to Seek Treatment

Table 4.10 illustrates the loading with t-values and squared multiple correlations among each observed variables for delay time to seek treatment measurement. Based on an accepted level of .05, t-value test statistic needs to be >±1.96 before the hypothesis could be rejected. The results revealed that most of all sub-scales of the measurement had significant low to high parameter estimates, which were related to their specific constructs and validated the relationships among observed variables and their constructs. (Confirmatory factor analysis of the measurement models are presented in Appendix H).

Furthermore, the squared multiple correlations (R^2) for observed variables of the latent variables ranged from 0.53 to 1.00 (Table 4.10). The R^2 of each observed variables were strong indicators. (Table 4.10)

Table 4.10 Loading and reliability of indicators

Construct and Indicators	Standardized Factor loading	t-value	Standard error	R^2
CIR				
• ID	0.42-0.49	4.13-4.91	0.10	0.59
• Cause	0.54-0.65	4.05-4.91	0.13	0.53
• TL	0.13-0.86	1.02-8.12	0.11-0.13	1.00
• CSQ	0.36-0.48	4.98-5.56	0.07-0.09	0.78
• Ctl.	0.44-0.45	4.27-5.50	0.08-0.10	0.53
Coping				
• PFCS	0.45-1.32	2.52-4.27	0.18-0.31	1
• EFCS	0.82-1.19	7.69-10.05	0.12	1

Note:

R^2 = Square multiple correlation
CIR-DLT = Cognitive Illness Representation of Delay to Seek Treatment
Coping-DLT = Alternative Coping Strategies of Delay to Seek Treatment
- ID = Illness Identity
- Cause = Potential Cause
- TL = Timeline
- CSQ = Consequence
- Ctl. = Controllability

PFCS = Problem-focused coping strategies
EFCS = Emotional-focused coping strategies

In summary, from this findings revealed that all measurement models fit the empirical data. Chi-square tests showed low values with non-significant levels. Both GFI and AFI values were close to or equal to 1.0, and RMSEA values less than .05. All measured models indices were acceptable. The classical approach testing of reliability and validity provided adequate support for the five measures. Therefore, the structural equation analysis was conducted to estimate the hypothesis model of delay to seek treatment in the following steps

1.2 Assessment of structural model

Once the acceptable measurement models were determined, the SEM was analyzed. To be congruent with the hypothesized model presented (Figure 4.1), severity of symptom was treated as the exogenous variable with only one observed variables. The endogenous variables include cognitive illness representation, emotional representation, alternative coping strategies, appraisal symptom as seriousness, and delay time to seek treatment with ten observed variables: illness identity, potential cause, timeline, consequence, cure/controllability, emotional response to symptom, problems-focused coping, emotional-focused coping, appraisal symptom as seriousness, and delay time to seek treatment. The equation of SEM is:

$$\eta = \beta\eta + \gamma\xi + \zeta$$

Where η = an m x 1 random vector of endogenous variable

β = an m x m matrix of coefficient of endogenous variable

γ = an m x m matrix of coefficient of exogenous variable

ξ = an n x 1 vector of exogenous variable and

ζ = an m x vector of equation errors in the structure relationship between η and ξ (Joreskog and Sorborn, 1996-2001, p.2)

Model identification

According to Tabachnick and Fideell's (2007) suggestion, the overidentified model is one with more data points than free parameters. The number of data points is {p (p+1)}/2, where p equals the number of observed variables (Tabachnick and Fideell, 2007, p.695). In the hypothesized model, there are 11 measured variables with a total of 55 data points: 11(11+1)/2= 66 and 25 parameters. The hypothesized model has 31 fewer parameters than data points, thus the model were over-identified which means that it can be identified.

Step one: Hypothesized model testing

The proposed model tested is shown in Figure 4.1 and table 4.11. Path coefficients are standardized because it is easier to compare the model coefficient (Hair et al., 1998). The results revealed that the hypothesized model did not fit the data using the following values χ^2 = 179.32, *df*= 41, p= 0.00, GFI=0.83, AGFI=0.73, and RMSEA= 0.15 The hypothesized model accounted for 53% of variance on delay to seek treatment among the study sample. However, the RMSEA values in the current study were above than expected. The AGFI values were less than the acceptable value of 0.90. These diagnostics suggested the hypothesized model provided a bad fit. In order to decrease χ^2 values, the modification indices, standardized residuals, and expected value suggested through freed the Theta-Epsilon metric (TE) and Theta-Delta (TD) was used . Therefore, the proposed model was refitted to get a suitable model that fitted the data.

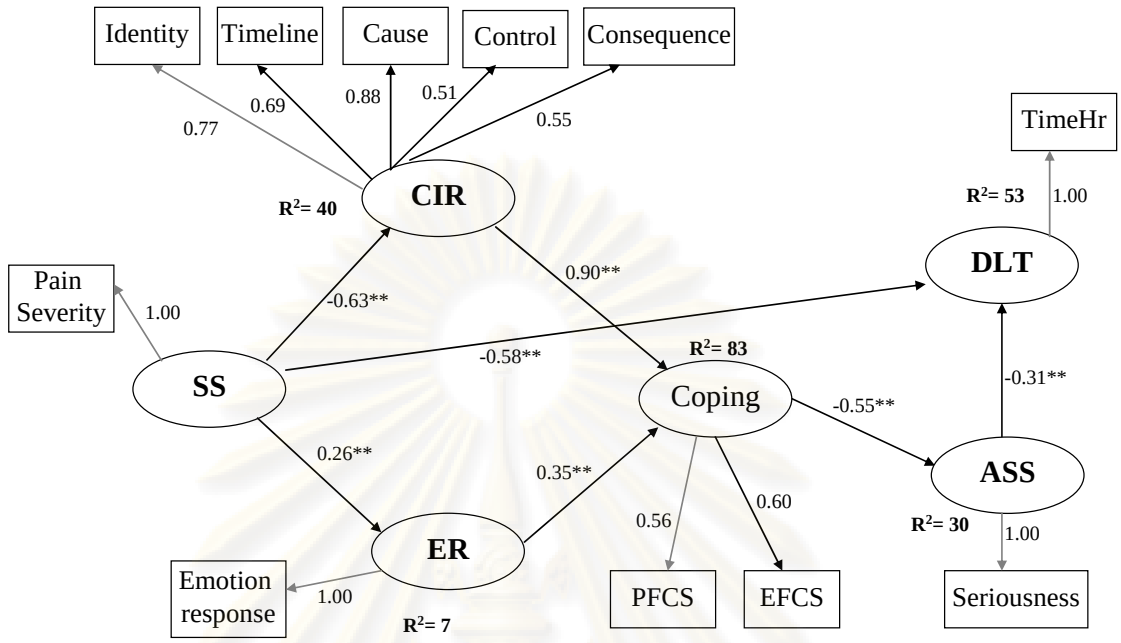


Figure 4.1 The proposed model of delay to seek treatment among AMI patients.

Note

R^2	=	Square multiple correlation
CIR	=	Cognitive Illness Representation
-ID	=	Illness Identity
-Cause	=	Potential Cause
-TL	=	Timeline
-CSQ	=	Consequence
- Ctl.	=	Controllability
ER	=	Emotional response to symptom
PFCS	=	Problem-focused coping strategies
EFCS	=	Emotional-focused coping strategies
ASS	=	Appraisal symptom seriousness
DLT	=	Delay to Seek treatment (≥ 2 hour)

Step two: Model modification

The modified model (Figure 4.2 and Table 4.11) had a better fit than the hypothesized model. The χ^2 estimate was non-significant (χ^2 = 31.18, *df*= 27, p= 0.26), indicating a good fit. The model exhibiting GFI and AGFI indices were greater than 0.90 (GFI=0.97, AGFI=0.92) and the RMSEA was less than 0.05 (RMSEA= 0.03), meanwhile the χ^2 per degree of freedom was 1.15. It can be seen that the p-value and goodness of fit indices have showed an improved by adding the relationship of the errors of cognitive illness representation with alternative coping strategies, and the relationship among the error of emotional representation and alternative coping strategies. Furthermore, the difference in χ^2 was greater than that of *df* (χ^2 1- χ^2 2 = 147.52, *df*1-*df*2= 14 meaning that the modified model had a better fit to the empirical data.

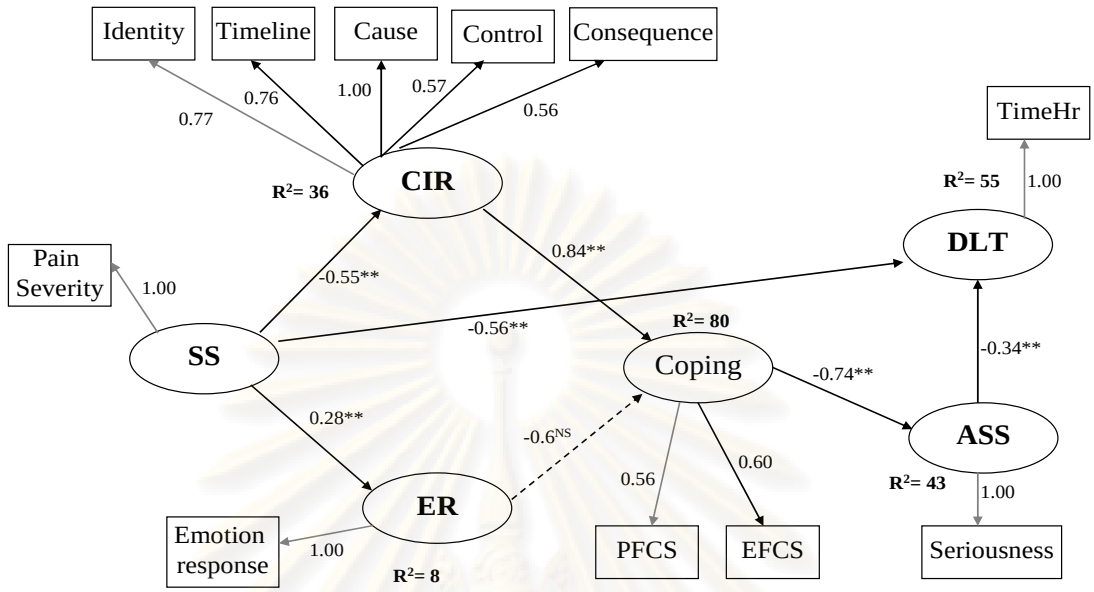


Figure 4.2 The modified model of delay to seek treatment in AMI patients

Table 4.11 Comparison of hypothesized and revised structural model

Goodness of Fit indices	Hypothesized model	Revised model
Chi-square	179.32	31.18
Degree of freedom	41	27
p-value	.00	0.26
Goodness of fit index(GFI)	0.83	0.97
Adjusted goodness-of fit- index(AGFI)	0.73	0.92
Comparative Fit Index (CFI)	0.82	0.99
Root mean square error of approximate (RMSEA)	0.15	0.031
Normed fit index(NFI)	0.79	0.97
R^2 for structural equations	**0.53**	**0.55**

Evaluation of goodness of fit criteria is presented as follows:

1. Offending estimates

The modified model had no negative error variance, standardized coefficient closely to 1, or very large standard errors indicating that there were no offending estimates.

2. Overall fit index

The absolute fit measures showed that elements of the covariance matrix reproduced by the parameter estimates of the hypothesized model were not significantly different from the covariance of empirical data (p = 0.26), the RMSEA was small (0.031) indicating the empirical data fit. The GFI and AGFI were above 0.90 and close to 1 (.97 and .92), respectively. The ratio of χ^2 to the degrees of freedom was less than 2 as indication of information on the relative efficiency of competing model in accounting for the data.

3. Measurement model fit

Most indicators loading were statistically significant at level .05. The reliability of indicators ranged from 0.08 to 0.80 suggesting that most indicators were sufficient to represent the constructs.

4. Structural model fit

All path coefficients were statistically significant. The correlations between the constructs were not high. The R^2 for the structural equation was 0.55, meaning that the revised model can be accounted for 55% of the variance in delay to seek treatment among AMI patients. The very strong of coefficient was the alternative coping strategies that can explain 80%. For other predictors, the model accounted for

43% of the appraisal symptom as seriousness, 38% in cognitive illness representation, and 8% of the variance in emotional representation, respectively.

In conclusion, the statistics confirmed that the hypothesized structural equation model fit the structural equation model derived from the empirical data.

Hypotheses testing

In order to test six hypotheses and the direct and indirect effects were estimated. A summary of the effects of the causal variables on the affected variables is presented in table 4.12. The hypotheses of the proposed causal model of delay to seek treatment in AMI patients were examined and the findings were as follows.

1) Effect of severity of symptom on delay to seek treatment

Severity of symptom had a significant negative direct effect on delay to seek treatment (β = -0.58, p<0.001).

Severity of symptom had a significant negative direct effect on cognitive illness representation (β = -0.55, p<0.001) and it had a significant negative indirect effect on delay to seek treatment (β = -0.12, p<0.001) through alternative coping strategies (β = -0.48, p<0.001), but it had positive indirect effect through appraisal of symptom as seriousness strategies (β = 0.36, p<0.001).

Severity of symptom had a significant positive direct effect on emotional representation (β = 0.28, p<0.001).

The total effect of Severity of symptom on delay to seek treatment, cognitive illness representation, emotional representation, alternative coping strategies, and

appraisal symptom as seriousness were -0.68, -0.55, 0.28, -0.48, and 0.36, $p<0.001$, respectively.

2) Effect of cognitive illness representation on delay to seek treatment

Cognitive illness representation had a significant positive direct effect on alternative coping strategies ($\beta = 0.84$, $p<0.001$) and a significant positive indirect effect on delay to seek treatment ($\beta = 0.21$, $p<0.001$), but it had negative indirect effect on delay to seek treatment through appraisal symptom seriousness ($\beta = -0.62$, $p<0.001$)

The total effect of cognitive illness representation on delay to seek treatment, alternative coping strategies, and appraisal symptom seriousness were 0.21, 0.84, and -0.62, $p<0.001$, respectively

3) Effect of emotional representation on delay to seek treatment

Emotional representation had neither a significant negative direct effect on alternative coping strategies ($\beta = -.06$, $p>0.05$) and nor a positive indirect effect on delay to seek treatment ($\beta = 0.01$, $p>0.05$) through appraisal symptom seriousness ($\beta = -0.04$, $p>0.05$).

The total effect of emotional representation on delay to seek treatment, alternative coping strategies, and appraisal symptom seriousness were -0.12, -0.20, and -0.22, $p>.005$, respectively

4) Effect of alternative coping strategies on delay to seek treatment

Alternative coping strategies had a significant negative direct effect on appraisal symptom seriousness (β = -.74, p<0.001) and a significant positive indirect effect on delay to seek treatment (β =0.25, p<0.001) through appraisal symptom seriousness (β = -.62, p<0.001).

The total effect of alternative coping strategies on delay to seek treatment and appraisal symptom seriousness was 0.25 and -0.74, p<0.001.

5) Effect of appraisal symptom seriousness on delay to seek treatment

Appraisal symptom seriousness had a significant negative direct effect on delay to seek treatment (β =-0.34, p<0.001) and had a total effect on delay time to seek treatment was -0.34, p<0.001.

Table 4.12 Summary of the effects of causal variable on the affected variables (n=160)

Causal variable	Affected variables														
	Emotional Representation			Cognitive Illness Representation			Alternative coping Strategies			Appraisal Symptom Seriousness			Delay to Seek Treatment		
	DE	IE	TE	DE	IE	TE	DE	IE	TE	DE	IE	TE	DE	IE	TE
SS	0.28**	-	0.28**	-0.55**	-	-0.55**	-	-0.48**	-0.48**	-	0.36**	0.36**	-0.56**	-0.12**	-0.68**
ASS	-	-	-	-	-	-	-	-	-	-	-	-	-0.34**	-	-0.34**
Coping	-	-	-	-	-	-	-	-	-	-0.74**	-	-0.74**	-	0.25**	0.25**
CIR	-	-	-	-	-	-	0.84**	-	0.84**	-	-0.62**	-0.62**	-	0.21**	0.21**
ER	-	-	-	-	-	-	0.06 ^{ns}	-	-0.06 ^{ns}	-	-0.04 ^{ns}	-0.04 ^{ns}	-	0.01 ^{ns}	0.01 ^{ns}
Structural Equation Fit	R^2= 0.08			R^2=0.36			R^2= 0.80			R^2= 0.43			R^2= 0.55		

ns=non significance, *p<.05, ** p<.001

Note:

DE = Direct effect

IE = Indirect effect

TE = Total effect

Hypotheses testing

Hypothesis 1*: Severity of symptom has a negative direct effect on cognitive illness representation, and delay to seek treatment and a positive direct effect on emotional representation*

The statistical analysis in Table 4.12 and Figure 4.2 illustrate that severity of symptom had a significant negative direct effect on cognitive illness representation (β = -0.55, p<0.001) and delay to seek treatment (β = 0.-56, p<0.001), and emotional representation (β = 0.28, p<0.001). Therefore, this hypothesis was supported.

Hypothesis 2: *Severity of symptom has a negative indirect effect on delay to seek treatment through cognitive illness representation and emotional representation.*

According to the modified model (Table 4.12, Figure 4.2), severity of symptom had a significant negative indirect effect on delay to seek treatment through cognitive illness representation and alternative coping strategies (β = -0.12, p<0.001). When considering the indirect effect on delay to seek treatment through emotional representation, this pathway was insignificant. Thus, hypothesis two was partially supported.

Hypothesis 3: *Cognitive illness representation has a positive direct effect on alternative coping strategies and an indirect effect on delay to seek treatment through alternative coping strategies and appraisal symptom seriousness.*

The parameter estimates in table 4.12 and figure 4.2 demonstrated that following model modification, cognitive illness representation was still reported as statistically significant with strong negative direct effect on alternative coping

strategies (β =-0.74, p<0.001), and a positively significant indirect effect on delay to seek treatment (β = 0.21, p<0.001). Therefore, hypothesis three was completely supported as proposed in the hypothesized model of delay to seek treatment in AMI patients.

Hypothesis 4: *Emotional representation has a negative direct effect on alternative coping strategies and it has a negative indirect effect on delay to seek treatment through on alternative coping strategies and appraisal symptom seriousness*

The finding in Table 4.12 and Figure 4.2 demonstrate that emotional representation had neither a significant negative direct effect on alternative coping strategies (β = -.06, p>0.05), and nor a positive indirect effect on delay to seek treatment (β = 0.01, p>0.05) through appraisal symptom seriousness (β = -0.04, p>0.05). Therefore, this hypothesis 4 was rejected.

Hypothesis 5: *The Alternative coping strategies has a negative direct effect on appraisal symptom seriousness and has positive indirect effected on delay to seek treatment through appraisal symptom seriousness.*

The finding in Table 4.12 and Figure 4.2 show that alternative coping strategies had a significant negative direct effect on appraisal symptom seriousness and a significant positive indirect effect on delay to seek treatment through appraisal symptom seriousness (β =0.25, p<0.001). Thus, this hypothesis was supported.

Hypothesis 6: *The appraisal symptom seriousness has a negative direct effect on delay time to seek treatment.*

A demonstrated in Table 4.12 and Figure 4.2 showed that appraisal symptom seriousness had a significant a negative direct effect on delay to seek treatment (β = .34, p<.001). Therefore, the final hypothesis was completely supported as proposed in the hypothesized model of delay to seek treatment in AMI patients.

Summary

In summary, this chapter reported the demographic characteristics of study variables have been explained. The preliminary analysis demonstrated that the assumptions for SEM analysis were not violated. Each one of the measurement model was examined and confirmed the construct validity. Following, the hypothesized causal model of delay to seek treatment in AMI patients was analyzed and modified. The modified causal model fits well with the empirical data. The AMI delay in seeking treatment model was providing. Although one of the research hypotheses were partially supported, and one was rejected, the model retained significant factors and is practical for explaining factors affecting delay to seek treatment in AMI patients. As a final point, all the variables in the modified model explained approximately 55 % of the variance in overall delay to seek treatment in AMI patients.

CHAPTER V

DISCUSSION, IMPLICATIONS AND RECOMMENDATIONS

The discussion of the findings of this study is presented in this chapter. It includes discussion of characteristics of the study sample, characteristics of the study variables, the model and hypothesis testing, conclusion, implication to nursing, and recommendations for future research.

Characteristics of the study sample

The statistical analyses demonstrated that characteristics of the study sample were similar to previous studies. Most participants were male, married, Buddhist, had elementary education, and with lower income of less than 10,000 Baht per month consistent with WHO reported lower to middle income were found chronic illness patients. Over half of the respondents had household health expenditures financial supported from government, which were similar to the numbers of previous Thai studies (Krairatcharoen, 2006; Worachotekamjorn, 2000; TACSR, 2007; Sriprasong, 2008).

Half of the participants were in the young group (<60 years). The age of the sample in the current study was younger than expected. However, other studies of delay in seeking treatment in AMI patients had similar results. In meta synthesis of 48 investigations, Lefler and Bondy (2004) reported the mean age of the participants in those studies to range from 57 to 71 years old. The younger ages in studies of treatment seeking in AMI could be because older patients who are potential participants in these studies may have been ineligible because of secondary factor such as altered cognitive status and/or hemodynamic instability. The homogeneity of

this sample limits the generalizability of finding to homogenous population of AMI patients.

The classic symptom presentation in AMI patients leading with chest pain or chest discomfort and dyspnea. The most frequent reported symptom was chest pain, followed by dyspnea, then sweating and epigastric discomfort, however, mostly reported more than one symptom. In addition, more than haft patients had attribution of symptom to the heart related, followed reported symptom occurred related to stomach, fatigue and muscle pain. Most participants reported that AMI symptoms first appeared while they were at home.

In this study, mostly of participants had a variety of difference symptoms (two or more) which may have contributed to the confusion and can't representation this illness caused from heart related. McSweeny et al., (2003) in their study found that the average number of acute experienced was seven. In the current study, the number of symptoms experienced may have been lower than reported because participants may explained symptom only in list in RSQ and therefore calculate the mean number was 4.6 (SD=1.6) the symptom presentations were similar to those found for AMI patients with previous research (Rosenfeld, 2004). The most common reported chest pain with…(i.e fatigue, discomfort, breathlessness).

Characteristic of dependent study variable

Delay to seek treatment

In this study, the delayer of 160 cases collected from symptom onset to arrival at emergency room ≥ 2 hours had the median delay time was 6 hours 57 minutes. These delay time figures reveal a serious call for action to improve AMI Thai patients in order to prevent their mortality and morbidity. Receiving treatment within 2 hours from the onset of symptom is meaningful for effective treatment and patient's positive prognosis outcomes (GISSI, 1986). More over, the report of the overall time to seek treatment may present only the tip of an iceberg. As shown in the data of the Thai Acute Coronary Syndrome Registry Projected which reported that the median time to seek treatment was 3 hours 18 minute (TACSR, 2007).

Study of delay time, median delay time is most often reported because outlier skews mean delay time. Welsh, Ornaton, and Armstrong (2003) compared median delay times in clinical trials for AMI between 1990 and 2001, and found that median delay time to be between two and tree hours. However, the delay time may have been actually lower than in the general population because several of this trial excluded participants that waited longer than six hour to seek treatment.

Model and hypotheses testing results

The findings reveal that 4 of 5 hypotheses were fully supported by the empirical data whereas one hypothesis was only partly supported.

1. Severity of symptom had a significant negative direct effect on delay time to seek treatment (β = -0.58, p<0.001). As well, had a significant negative direct effect on cognitive illness representation (β = -0.55, p<0.001), but positive direct effect on emotional representation (β = 0.28, p<0.001).

As expected, results of the current study support the hypothesis that Severity of symptom had a strong negative direct effect on delay time to seek treatment. This illustrated that the AMI patients with a high degree of intensity of symptom in their sensation had response by seek to treatment. Severity of symptom was derived from stage of sources of information, from bodily experience that has been identified by Leventhal as basic source of information used in the process of defining an illness experience and refers to the symptom that AMI patients experience. This study was supported by the literature, in that the more severe of symptoms were, the sooner the individual in their study sought treatment (Golberg et al, 2002; Zervic et al., 2003), the nature of symptoms presentation was found to influence delay in seeking treatment. While having continuous or high level of symptoms intensity predicted short pre-hospital delay (Banks and Dracup, 2006; Horne et al., 2000; Goldberg at al. 1999: McKinlay, Moser, and Dracup, 2000: Schmidt and Borsch, 1990).

Severity of symptom had a significant negative direct effect on cognitive illness representation (β = -0.55, p<0.001), the data were support this hypothesis, symptom serve the purpose of signaling the possible existence of the disease state in the body, and are usually key components in illness diagnosis (Teel et al., 1997). The presence of pain with an AMI can result in suffering, and the suffering can lead to the behavior of seeking treatment for the symptom of pain, the study was support by McKinlay, Moser, Dracup, (2000), found that AMI patients in North America, have intermittent symptom and response by attribution of symptoms to a non-cardiac cause and associated with delay to seek treatment.

Severity of symptom had positive direct effect on emotional representation (β = 0.28, p<0.001). The study by McKinlay, Moser, Dracup, (2000), also found that AMI people in Australia had severe of pain intensity, but who fell embarrassment about seeking help that associated with delay for receive treatment. These resulted were correlated with resulted by Burnett et al, (1995) found that shorter delay times were associated with more comfort in seeking treatment (β=-0.24, p<0.0001).

2. Severity of symptom had a negative indirect effect on delay time to seek treatment (β = -0.12, p<0.001) through alternative coping strategies (β = -0.48, p<0.001), but it had positive indirect effect through appraisal of symptom as seriousness strategies (β = 0.36, p<0.001).

AMI patients in current study had moderate or intermittent pain score, she/he were that effect to patients use strategies to cope with this symptom and belief in this symptom not cardiac in origin then that not seriousness condition, reveal that patient delay to seek treatment. This hypothesis consistent with previous study, when

presenting symptoms (intermittent symptom) do not match with patient's expectation of the symptom (chest pain and severe pain), prolong delay resulted (Johnson & King (1995; Zerwic et al., 2003)

3. Cognitive illness representation had a significant positive direct effect on alternative coping strategies (β = 0.84, p<0.001) and a significant positive indirect effect on delay time to seek treatment (β =0.21, p<0.001), but it had negative indirect effect on delay time to seek treatment through appraisal symptom seriousness (β = -0.62, p<0.001).

The finding supported our hypothesis that cognitive illness representation was produced by intermittent pain severity that can interpreted to not *cause* from heart (digestion, lung, fatigue,..), chronic symptom *timeline* (came and went of symptom), they belief in their capability to *control* over this symptom, and *identity* to non cardiac in origin, and finally interpreted to not fear of the *consequence* of symptom. there fore that associated with delay, consisted with previous study, at lease three investigators support the assumption that patients who correctly attribute their presenting symptom to their hearts have decreased delay to seek treatment (Burnett et al., 1995; Meishke et al., 1999; Lislie et al., 2000), another study Fox-Wasylyshyn, El-Masri, and Artinian, (2010), found AMI patient who conducted SEM analysis to investigated symptom congruence that correlate with cardiac symptom attribution and associated with delay in seeking treatment. Bleeker et al., (1995) carried out multivariate analysis of variance (MANOVA) on 'coping in general' and 'denial'. The coping scales showed a statistically significant multivariate effect (F=2.53; p=0.016). Patients who sought help within half an hour were active problem solvers (t=2.2, p=0.031, Bonferroni 90%

CI=-0.07; 1.10), sought more social support (t=2.0, p=0.047, Bonferroni 90% CI=-0.08; 0.76), that associated with delay.

4. Emotional representation had neither a significant negative direct effect on alternative coping strategies (β = -.06, p>0.05) and nor a positive indirect effect on delay time to seek treatment (β = 0.01, p>0.05) through appraisal symptom seriousness (β = -0.04, p>0.05).

Emotional response to symptom failed to act as the mediator linking severity of symptom to delay time to seek treatment in this study, that ours supported, Anxiety was not statistically significant. Similarly, Rawles et al., (1990) and Burnett et al (1995) found that anxiety was not statistically significantly related to delay time, consistent with Lesneski (2005) result from doctoral dissertation found no significant difference between emotional (anxious) of the participant and delay time. But contradict with Burnett et al (1995) found that shorter delay times were associated with more comfort in seeking medical assistance (β=-0.24, p<0.0001). Comfort in seeking medical assistance was the second most statistically significant predictor of delay time (after perceived seriousness of symptoms), and it reduced delay time by 55 minutes, Ho et, al., (2002); Finnergen et al, (2000); Meishke, (1999) resulted reveal that fearing embarrassment that associated with delay consistency with Mekinley, Moser, & dracup, (2000), Australians AMI patients had associated with delay to seek treatment because one of factor that fearing embarrassment.

This non-significant finding could be explained because and emotional response may not be the variable to study or the operational definition was problematic. In this study, the emotional response is an external expression of

emotion associated with symptom. The embarrassment and level of anxiety in this study did not delay time. Emotional response to symptoms did not influence the three stages of the adapted SRM: cognitive illness representation due to heart related, action plan for coping strategies selected, and symptom appraisal. However, be possible that delay in seeking treatment may be studied with a stress or crisis emotion.

5. Alternative coping strategies had a significant negative direct effect on appraisal symptom seriousness (β = -.74, $p<0.001$) and a significant positive indirect effect on delay time to seek treatment (β =0.25, $p<0.001$) through appraisal symptom seriousness (β = -.62, $p<0.001$).

Alternative coping strategies could directly and indirectly predict delay time to seek treatment through appraisal of symptom as seriousness.

AMI patient in this study had used many of coping strategies to deal with symptom, for example on emotional focused coping, the mostly frequently used by AMI patient were tried not to think about symptom, tried to pretend nothing was wrong, did something to take off from symptom (watch TV, Read a book, etc.). On problem-focused coping patients mostly try to went to bed/ rested, tried to relax, and told someone nearby, and then patient not appraise symptom that threat with her/him life threatening. These hypotheses was supported by the reported influencing of coping strategies that increased delay in seeking treatment for symptom of AMI, includes various coping strategies like waiting (Dracup et al, 1997; Lee et al., 2000; Mekinley, Moser, & dracup, 2000), Self-treatment and rest (Zerwic, 2003; Aston, 1999), and other advise (Ho et, al., 2002; Finnergen et al, 2000). Dempsey et al, (1995), reported that patients with AMI utilized a sequence of appraisal and re-

appraisal of symptoms to clarify the cause of the symptoms. These problem-focused coping are common and often effective in restoring equilibrium in non-emergency conditions. However, in emergent situations, such as AMI, these strategies take up valuable time and delay treatment seeking. When intermittent of symptom occurs, the representation by cognitive domain that interpret stimuli not to cardiac in origin or not, that show uncertainty of symptom was emerge, may cause the AMI patients to utilize time-consuming strategies to clarify the situation such as analyzing the symptoms for a cause. Within the SRM, appraisal of the symptom results in a decision as to whether the symptoms represent a health threat or not, if there is threat, the severity of the threat and the action to be taken (Shaw, 1999). Failure to recognize the symptom as a significant threat may lead to delay to seek treatment.

6. Appraisal symptom seriousness had a significant negative direct effect on delay time to seek treatment (β =-0.34, p<0.001) and had a total effect on delay time to seek treatment was -0.34, p<0.001.

Appraisal symptom seriousness could indirectly predict delay time to seek treatment in this study. This hypothesis is supported by Mohamed (2007), when AMI patient had perception to appraise the symptom or the threat as serious condition is important for better recognition and early treatment, resulted from her studied found, One third of the participants perceived their symptoms as serious and one third perceived their symptoms as not at all serious. Regression analysis revealed that perceived their symptoms can predicted time to seek treatment, which consisted with ours previous studies (Moser, McKinley, & Dracup, 2000).

Conclusion

The purpose of this cross-sectional descriptive research was to examine the causal relationships among selected factors (symptom severity, cognitive illness representation, emotional response to symptom, alternative coping strategies, and appraisal symptom seriousness), among Thai AMI patients. A descriptive SRM model has provided a conceptual framework of the study.

A sample of 160 Thai AMI patients was randomly selected using multistage random sampling from government tertiary hospital across all in Bangkok. The data collection was conducted during January 2008–December 2008.

Instruments used in this study included the RSQ-modified and CHASS. The back translation technique was used to assure the accuracy of the translation for RSQ-modified and CHASS. The validity and reliability of the instruments were examined. A confirmatory factor analysis was conducted to determine the construct validity and to test the hypothesized measurement model of the instruments. Finally, LISREL version 8.52 was used to examine the causal model. The measurement model of the two latent constructs including Cognitive illness representation and alternative coping strategies were assessed before testing and structural paths, and all showed a good overall fit.

Most of the participants were male, married, Buddhist, had elementary education, with a household income of less than 10,000 Baht per month. The most frequent reported symptom was chest pain, the more than haft report severe pain intensity In addition, more than haft patients had attribution of symptom to the heart related; most participants reported that AMI symptoms first appeared while they were at home.

On the response of others to patient symptoms: Participants indicated when was with them when they experienced symptoms and how other people responded to symptoms. Participants were most often with a spouse or partner, when others heard about symptoms, common responses were to get the participant medical help, took them to the hospital, and call for Emergency Medical Service. On the knowledge of rapidly to seek treatment for receive thrombolytic or balloon procedure therapy 61.0% of participants reported never heard fribrinolytic drugs and 46.90% Balloon surgery for treated of heart disease. Most of all patients had both uncontrollable and controllable risk factors. Nearly quarter of patients had a family history of cardiovascular disease**.** In terms of risk factors, half of participants also had hypertension. More than half of the subjects were diagnosed with ST elevated myocardial infarction (STEMI). Some patients manifested complications, including arrhythmias, heart failure, upper gastrointestinal bleeding.

The average peak of symptoms severity experienced by the sample was 6.93 (SD =2.22) that can interpret was moderate pain, patients also had a positive perception about illness representation in all subscales include illness identity, timeline, consequence, controllability, and perceive potential cause. patients used both problem-focused coping and emotional focused coping strategies moderately, though they used more problems focused coping strategies than emotional focused coping strategies. In addition, the emotional representation had moderate to high level that patients was response to symptom as anxiety with this symptom began. On patients perception of symptom appraisal had showed the moderated to high participant's appraisal with AMI symptom that seriousness. The last variable was delay time to

seek treatment, the average time of patients delay came to seek treatment was 4.68 hour (4 hour 40 minute) (median = 3.65, SD = 3.47).

The modified delay to seek treatment model had a better fit to the empirical data with χ^2 = 31.18, df= 27, p= 0.26, GFI=0.97, AGFI=0.92, RMSEA= 0.03. The predictors on the overall model accounted for 55% of the variance of delay time to seek treeatment, 80% of alternative coping strategies, 43% of appraisal symptom seriousness, and 36% of cognitive illness representation. The findings of the causal relationship testing of the overall model were as follows:

1. Severity of symptom had a significant negative direct effect on delay time to seek treatment (β = -0.58, p<0.001). As well, had a significant negative direct effect on cognitive illness representation (β = -0.55, p<0.001), but positive direct effect on emotional representation (β = 0.28, p<0.001)

2. Severity of symptom had a significant negative indirect effect on delay time to seek treatment (β = -0.12, p<0.001) through alternative coping strategies (β = -0.48, p<0.001), but it had positive indirect effect through appraisal of symptom as seriousness strategies (β = 0.36, p<0.001). Severity of symptom could directly and indirectly predict delay time to seek treatment through alternative coping strategies and appraisal of symptom as seriousness.

3. Cognitive illness representation had a significant positive direct effect on alternative coping strategies (β = 0.84, p<0.001) and a significant positive indirect effect on delay time to seek treatment (β =0.21, p<0.001), but it had negative indirect effect on delay time to seek treatment through appraisal symptom seriousness (β = -

0.62, p<0.001). Cognitive illness representation could directly and indirectly predict delay time to seek treatment through appraisal of symptom as seriousness.

4. Emotional response to symptom had neither a significant negative direct effect on alternative coping strategies (β = -.06, p>0.05) and nor a positive indirect effect on delay time to seek treatment (β = 0.01, p>0.05) through appraisal symptom seriousness (β = -0.04, p>0.05). Emotional response to symptom failed to act as the mediator linking severity of symptom to delay time to seek treatment in this study.

5. Alternative coping strategies had a significant negative direct effect on appraisal symptom seriousness (β = -.74, p<0.001) and a significant positive indirect effect on delay time to seek treatment (β =0.25, p<0.001) through appraisal symptom seriousness (β = -.62, p<0.001). Alternative coping strategies could directly and indirectly predict delay time to seek treatment through appraisal of symptom as seriousness

6. Appraisal symptom seriousness had a significant negative direct effect on delay time to seek treatment (β =-0.34, p<0.001) and had a total effect on delay time to seek treatment was -0.34, p<0.001. Appraisal symptom seriousness could indirectly predict delay time to seek treatment in this study.

Implications to nursing

The implications of this study focusing on the implications for nursing are follows:

Implications for nursing science

Since little is known regarding the determinants that influence delay in seeking treatment among Thai AMI patients, this study proposed a causal model which explained 55% of the variance of delay in seeking treatment in AMI patients. The results of this study increase nursing knowledge by explaining the important roles of illness representation, coping strategies, appraisal symptom seriousness and emotional response to symptom on delay to seek treatment engagement among AMI patients. This study also contributes to nursing's body of knowledge by developing a middle-range theory to explain and guide public or individual promotion to reduce delay time to seek treatment among this group.

Implications for nursing practice

Based on the findings of the current study, some participants believed that own symptom not classical heart attack symptom (digestion, fatigue, dizziness from HT, hyperglycemia form DM) could due to delay in seek treatment. Nurses who are responsible for promoting health of people should be aware of the risk group.

The major mediators for delay in this study are rapidly to illness representation due to hear attack related, appraisal symptom seriousness and alternative coping strategies to deal with them, so that Nurses can develop nursing intervention address with these component, and fined out from risk specific group for educate specific

intervention how to attribution symptom due to the heart related and rapid cope with and react to this symptom by initial to seek treatment in early time.

Implications for nursing education

The findings of the present study suggest the need to promote the significance of illness representation due to heart related, appraisal of symptom, and coping strategies. That is, delay to seek treatment engagement could be improved through holistic approaches, particularly cognitive, emotional, social factors. In addition, student nurses should also be educated patients with specific high risk for AMI. Thus, the delay to seek treatment model should be included in the adult nursing education.

Recommendations for future research

Instrumentation issues

The RSQ had the first try to separate under theory based assumption (identity, timeline, consequence, control, cause, emotional response) by factor analysis, but this instrument have the 11 items of interval scale that only explained 73% of variance, future research need to validate by add item and test construct of this instrument.

Psychometric evaluations of the instruments used in this study including face validity, internal consistency and stability, and construct validity were satisfactory. However, the results indicated that RSQ and CHASS scale was first used in the Thai context. Regarding to CHASS measurement, it was modified to suit the Thai context, and it has been the first time that it has been used in Thai AMI patients. Although, the instrument was found to be suitable for measuring coping with heart

attack and with an acceptable internal consistency, several participants had difficulty responding to questions because the rapid of AMI event. It could be due to differences between cultural norms in western and Thai cultures. In addition, the results of this study indicate the need to establish a reliable and valid measure when used with Thai population. Besides, objective measures of symptom severity including only pain intensity should be considered as they that represent overall past experience of Thai AMI patients context. Only a small proportion of the variability in delay time to seek treatment was explained by the delay to seek treatment model in this study, therefore additional variables such as context (living alone, place of onset, distance from hospital), clinical and demographics characteristics (age, gender, co-morbidity), social influence (response of other to patients symptom) demand needs to be explored to fully understand the delay to seek treatment behavior of Thai AMI patients.

Data collection issues

Delay time to seek treatment in this study, data were collected from patients' retrospective accounts of their symptoms, behaviors, and treatment-seeking decisions between 24 and 72 hours after admission. Reliance on patients' memories introduces the possibility of recall bias and inaccuracy. However, to validate accuracy of recall, data were also collected on hospital arrival time as documented in the patients' charts and situation around patients for example time of TV showed when symptom onset will help that patients' retrospective reports of time were generally accurate.

Interview was found to be appropriate for older AMI patients (mean age 61.13 years), since most of participants had primary education. The researcher and research assistants concerned on the importance of the clarity of answers and the words used in

the statements. In addition, the face-to-face interview might have leaded the participants to feel pressured in answering the questions according to society norms. As a consequence, these might have contributed somewhat on the internal validity of the research. The investigator should therefore reserve time to collect data and be concerned about the social desirability issue.

In current study, several participants spoke of how they knew that they need to go the hospital but had waited for a more convenience time before going to the hospital or contacting family or friends to tell them they felt or ask them to take them to the healthcare provider or hospital. One woman, who experience chest pain all night, waited to call to her son until sure he was awake for work in the morning, she said, “I just didn’t want to bother anyone in the middle of the night” However, this study had limitation on not have open end interviewed, for asked participants who are Delayer “Why you not come to hospital, when the first notice of symptom begin?’ next, study could be include.

Future research need to study the overall of delay time. It’s includes between symptom onset occurs to patients will receive definite treatment (reperfusion therapy or PCI). Study of all time of delay will show the all of factors contributing delay to AMI patients who receive delay treatment.

In addition, this study was a cross-sectional design. All the variables in the theoretical model were measured at one point in time and not manipulated during the study period. Nevertheless, the data collection procedure was concerned about the sequences of variables occurred. The AMI decision-making process is conceptualized as a decision-making process in which non-recursive relationships may exist among the variables secondary to changes in symptoms, alternative coping strategies such as

self-treatment strategies, and thought processes if appraisal of seriousness not satisfies. However, the cross-sectional nature of this study prohibits the ability to capture the dynamic changes that might have occurred among the study participants during their decision-making processes. Each participant was asked to answer three sets of questionnaire in the respective order: 1) the time when the symptoms occur and seek treatment at hospital arrival; 2) the time when you first notice with symptom; and 3) the influencing factor effect the amount of time to decision to seek treatment attention; then, 4) coping strategies whom deal with them symptom. Despite the limitations in data collection, this cross sectional design is a systematic way to determine predicted relationships and a preliminary step for intervention research.

Research design issues

Although this study was limited by the cross-sectional design, the findings suggest that severity of symptom, cognitive and illness representation, alternative coping strategies, appraisal symptom seriousness have significant influences on delay to seek treatment engagement in AMI patients. However, a longitudinal study or an intervention study design is needed. This study demonstrates that the SRM can be used to develop a framework and to provide a direction to the development of interventions for delay time to seek treatment in Thai AMI patients. Researchers may be able to reduced delay time to seek treatment behavior of Thai AMI patients by providing intervention programs designed to strengthen symptom appraisal, illness representation to heart attack related, and strategies to cope with heart attack symptom to decrees negative outcome. Moreover, further investigations are needed to validate

the delay to seek treatment model in different population subgroups such as the gender, age, comorbidity, and previous heart attack in in rural and urban areas

Theoretical issue

Results from the theoretical modeling can guide further theory development and testing. This study confirmed that appraisal symptom seriousness can predict delay time to seek treatment among Thai AMI patients. Cognitive illness representation and alternative coping strategies was a factor influencing appraisal symptom seriousness. However emotional representation not significant with coping strategies like on model proposition, in future research need to avoid about measurement on emotional representation.

Furthermore, the present study assessed only some of the important variables of interest in delay in seeking treatment research. Model misspecification, due to omitted variables (e.g., external environment stimuli, informative form lay person) and the sociodemorgraphic (gender, age, low SES) clinical characteristic (had comorbidity, previous AMI, previous high risk for AMI), is possible. Such correlates could have been added to the model to better understand its relationship to activity in the presence of other factors.

REFERENCES

American Heart Association (AHA). 2003. Heart and Stroke Facts. [online] Available from http://www.americanheart.org/downloadable/heart/1056719919740HSFacts2003text.pdf [2006, May 16]

American Heart Association. 2005. Heart di sease and stroke statistic-2005 update. [online]. Available from http://www.americanheart.org/downloadable/heart/1105390918119 HDSStats2005Update.pdf [2007, June 23].

American Heart Associat ion. 2007. Heart D isease and Stroke Statistics-2007 Update: A Report From the Am erican Heart Assoc iation Statistics Committee and Stroke Statistics Subcommittee. Circulation 115: e69-e171.

Antman, et al. 2004. A CC/AHA guidelines for the m anagement of patients with st-elevation myocardial infarction; a report of the Am erican College of Cardiology/American Heart Assoc iation task force on practice guidelines (committee to revise the 1999 Gui delines for the m anagement of patients with acute myocardial infarction). J ournal of the Am erican College of Cardiology, 44(3), E1-E211.

Al-Hassan, M.A. and Om ran S.M. 2005. The e ffected of health beliefs on health care-seeking decisions of Jordanian patients with Myocardial Infarction symptoms. International Journal of Nursing Practice 11(1): 13-20.

Armstrong, P.W., Collen, D., and Antm an E. 2003. Fibrinolysis for acute myocardial infarction: the future is here and now. Circulation 107: 2533-7.

Banks, A.D. and Dracup K. 2006. Factors A ssociated With Prolonged Prehospital Delay of African Americans With Acute Myocardial Infarction. American Journal of Critical Care 15: 149-157.

Burnett, R. E., Blumenthal, J. A., Mark, D. B., Leimberger, J. D., and Califf, R. M. 1995. Distinguishing between early and late responders to sym ptoms of acute myocardial infarction. Am erican Journal of Cardiolog y 75: 1019-1022.

Bleeker, J.K. et al. 1995. Psychological and knowledge factors related to delay of help-seeking by patients with acute myocardial infarction. P sychotherapy Psychosomatic 63:151

Byrne, B. 1998. Structural equation modeling with LISREL, PRELIS, and SIMPLIS: Basic concepts, applications and programming. Mahwah, New Jersey: Erlbaum.

Boersma, E., Maas, A.C.P., Deckers, J.W. and Simoons, M.L. 1996. Early thrombolytic treatment in acute myocardial infarction: reappraisal of the Golden hour. Lancet 348: 771-775.

Canto, J.G., Shlipak, M.G., Roge rs, W.J., Malmgren, J.A. and Fre derick, P.D. 2000. Prevalence, Clinical Characteris tics, and Mortality Among Patients With Myocardial Infarction Pr esenting Without Chest Pain. JAMA 283: 3223-3229.

Cheng, S. Guo L, Liu J., Zhu, X., and Yan, H. 2007. Factors influencing prehospital delay for patients with ac ute myocardial infarction. Journal of Geriatric Cardiology (March) 4(1): 11-13.

Cummins, R., Ornato, J.P., Thies, W.H., Pepe, P.E. 1991. Improving survival from sudden cardiac arrest: the "Chain of survival" concept: a statement for health professionals from the Advanced Cardiac Life Support Subcommittee and the Emergency Cardiac Care Committee, American Heart Association. Circulation 83:1832-47.

Dracup, K., Moser, D. K., Eisenberg, M., Meischke, H., Alonzo, A., and Braslow, A. 1995. Causes of delay in seeking treatment for heart attack symptoms. Social Science and Medicine, 40: 379-392.

Dracup K., and Moser, D.K. 1997. Beyond socio-demographics: factors influencing the decision to seek treatment for symptoms of acute myocardial infarction. Heart & Lung 26: 253-262.

Dracup, K. and et al. 2003. An International Perspective on the Time to Treatment for acute myocardial infarction. Journal of Nursing Scholarship 35 (4): 317-323.

Dracup, K., McKinley, S., Riegel, B., Mieschke, H., Doering, L., and Moser, D. 2006. A nursing intervention to reduce pre-hospital delay in acute coronary syndrome: A randomized clinical trial. Journal of Cardiovascular Nursing 21: 186–196.

De Luca, G., Suryapranata, H., Ottervanger, J.P. and Antman, E.M. 2004. Time delay to treatment and mortality in primary angioplasty for acute myocardial infarction: every minute of delay counts. Circulation 109:1223-1225.

Dempsey, S.J. and Dracup, K. 1995. Women's decision to seek care for symptoms of acute myocardial infarction. Heart & Lung 24: 444-56.

El-Masri, M.M. and Fox-Wasylshyn, S.M. 2006. Methodological Issues Associated with using Different Cut-off Points to Categorize Outcome Variables. Canadian Journal of Nursing 38(4): 162-172.

Fawcett, J., and Downs, F. S. 1992. The relationship of theory and research. Philadelphia: F.A. Davis

Finnegan, J.R. et al. 2000. Patient Delay in Seeking Care for Heart Attack Symptoms: Findings from Focus Groups Conducted in Five U.S. Regions. Preventive Medicine. 31(3): 205-213.

Frederick, A. et al. 2008. ACC/AHA 2008 statement on performance measurement and reperfusion therapy: a report of the ACC/AHA task force on performance measures (work group to address the challenges of performance measurement and reperfusion therapy. Circulation 118: 2649-2661.

Foxon, D. and Lenfant, C. 2001. Timing Is Everything: Motivating Patients to Call 9-1-1 at Onset of Acute Myocardial Infarction. Circulation 104:1210-1211.

Fibrinolytic Therapy Trialists' Collaborative Group [FTT]. 1994. Indications for Fibrinolytic therapy in suspected acute myocardial infarction: Collaborative overview of early mortality and morbidity results from all randomized trials of more than 1000 patients. Lancet February 5; 343(8893): 311-322.

Fox-Wasylyshyn, S.M. 2005. Delay in Seeking Treatment for acute myocardial infarction. Doctoral dissertation, College of Nursing, Wayne state University, Michigan, USA.

Fox-Wasylyshyn, S.M., El-Masri M.M., and Krohn H.K. 2007. Comparison of Coping Responses to Symptoms between First-time Sufferers and Those with a previous History of Acute Myocardial Infarction. Journal of Cardiovascular Nursing 22 (2): 145-151.

Fox-Wasylyshyn, S.M., El-Masri, M.M., and Artinian, N.T. 2010. Testing a Model of Delayed Care-Seeking for Acute Myocardial Infarction. Clinical Nursing Research 19 (1): 38-54.

Fukuoka, Y. 2001. Sociocultural factors contribution to health care seeking behavior In patients experiencing signs and symptoms of acute myocardial infarction in Japan. Doctoral dissertation, Faculty of Nursing, University of California Sanfrancisco, USA.

Gaspoz, J.M. et al. 1996. Impact of a public campaign on pre-hospital delay in patients reporting chest pain. Heart 76(2): 150-155.

Gibler, B.W. et al. 2002. Persistance of Delays in Presentation and Treatment for Patients With Acute Myocardial Infarction: The GUSTO-I and GUSTOIII Experience. Annals of Emergency Medicine 39: 123-130.

Goldberg, R.J., Gurwitz, J.H. and Gore, J.M. 1999. Duration of, and Temporal Trends (1994-1997) in, Prehospital Delay in Patients With Acute Myocardial Infarction.: the second National Registry of Myocardial Infarction. Archives Internal Medicine 1(October 11) 159(18): 2141-2147.

Goldberg, R.J., Yarzebski, J., Lessard, D. and Gore, J.M. (2000). Decade-Long Trends and Factors Associated W ith Time to Hospita l Presentation in Patients With Acute Myocardial In farction: The W orcester Heart Atta ck Study. Archives Internal Medicine 160: 3217-3223.

Goldberg, R.J. et al. 2002. Extent of, and Factors Associated with, Delay to Hospital Presentation in Patients with Acute Corona ry Disease (The GRACE Registry). The American Journal of Cardiology (April 1) 89: 791-796.

Gurwitz, J.H. et al. 1997. Delayed hospital presentation in patients who have had acute myocardial infarction. Annals of Internal Medicine 126: 593-599.

Gruppo Italiano Per lo Studio della S treptochinasi Nell'Infarcto Miocardico (GISSI). 1986. Effectiveness of intravenous thrombolytic treatment in acute myocardial infarction. Lancet (Febuary 22) 1(8478): 397-402.

Goldstein, P. and W iei, E. 2005. Managem ent of prehospital throm bolytic therapy in ST-segment elevation acute coronary syndrome (<12 hours). Minera Anestesiol 71(6): 297-302.

Gibler, W.B. et al. 2002. Persistence in delays in pr esentation and treatment for patients with acute m yocardial infarction: The GUSTO-I and GUSTO-III experience. Annals of Emergency Medicine 39(2): 123-130.

Hewitt, A.K. et al., 200 4. Predictors of delay in seeking medica l help in patients with suspected heart attack, and interventions to reduce delay: A system atic review. Centre for Reviews and Dissem ination, University of York. York Publishing Services Ltd. Health Public Statistics 2001-2005.

Hair, J.F., Anderson, R.E., Ththam, R.L., and Black, W.C. 1998. Multivariate Data Analysis. 5th ed, Upper Saddle River, New Jersey: Presentice -Hall International, Inc.

Halm, M.A., and Penque, S. 2000. Hear t failure in wom en. Progress of Cardiovascular Nursing 15(4):121-133.

Hair, J. F., Black, W . C., Babin, B. J., Anderson, R. E., and Tatham , R.L., 2006. Multivariate Data an alysis. 6th ed. New Jersey: Person Education International.

Hagger, M.S. and Orbell, S. (2003). A Meta-Analytic review of the Common-Sense Model of Illness Representations. Psychology and Health 18(2): 141-184.

Horne, R., James, D., Petrie, K., Weinman, J., and Vincent, R. 2000. Patients' interpretation of symptoms as a cause of delay in reaching hospital during acute myocardial infarction. Heart 83: 388-393.

Hoyle, R. H. 1995. Structural equa tion modeling: Concepts, issues, and applications. CA: Sage Publications

Johansson, I., Stromberg, A., and Swahn, E. 2004. Factors related to delay times in patients with suspected acute m yocardial infarction. Heart and Lung 33: 291-300.

Johnson, J. A., and King, K. B. 1995. Influence of expectations about symptoms on delay in seeking treatm ent during a myocardial infarction. Am erican Journal of Critical Care 4: 29-36.

Joreskog, K. G. and Sorbom, D. 1996-2001. LISREL 8: User's reference guide. Lincolnwood IL: Scientific Software International.

Joreskog, K. 2001. Structural equation modeling with lisrel 8.51**.** [online] available from http://www2.uni-jena.de/svw/metheval/materialien/ workshops/sem/joereskog_folien.pdf. [2005,March,18].

Kainth, A.K. et al. 2004. System atic review of interventions to reduc e delay in patients with suspected heart attack. Heart 90: 1161.

Kenyon, L.W., Ketterer, M.W., Gheoghiade, M., and Goldstein, S. 1991. Psychological factors related to prehospital delay during acute myocardial infarction. Circulation 84: 1969-1976.

Kittichot Worachotekamjorn. 2000. Effect of Fast Track System on door to balloon time and do or to needle time for acute myocardial infarction patients in King Chulalongkorn Hospital. Master's Thesis, Faculty of Medicin e, Chulalongkorn University, Thailand.

Kline, R. B. 1998. Principles and pr actice of structural equation m odeling. New York, NY: Guilford Press.

Kline, R. B. 2005. Principles and pr actice of structural equation m odeling. 2nd ed. New York: Guilford Press.

King, M. and McGuire, M. 2007. Symptom presentation and time to seek care in women and m en with acute m yocardial infarction. Heart & Lung 36(4): 235-243.

Khraim, F.M. Scherer, Y.K., Dorn, J. M., and Carey, M.G.. 2009. Predictors of decision delay to seeking health care among Jordanians with Acute Myocardial infarction. Journal of Nursing scholarship 41(3): 260-267.

Lazarus, R. S., and Folkman, S. 1984. Psychological stress and the coping process. New York: Springer.

Leventhal, H., Meyer, D., and Nerenz, D. 1980. The common-sense representation of illness danger. In S. Rachman (Ed.), Contributions to Medical Psychology 2: 7–30. New York: Pergamon Press.

Leventhal, H., Nerenz, D., and Steele, D. 1984. Illness representation and coping with health threats. In Baum, A. Taylor, S.E. and Singer, J.E.(eds) Handbook of psychology and health. Hillsdale, NJ: Lawrence Erlbaum: 219-252.

Leventhal, E.A. and Prochaska, T. 1986. Age, symptom interpretation, and health behavior. Journal of American Geriatrics Society 34: 185-191

Leventhal, H. and Cameron, L. 1987. Behavioral theories and the problem of compliance. Patient Education Counseling 10: 117–138.

Leventhal, H., Diefenbach, M., and Leventhal, E. A. 1992. Illness cognition: Using Common sense to understand treatment adherence and affect cognition interactions. Cognitive, Therapy and Research 16: 143-163.

Leslie, W.S., Urie, A., Hooper, J., and Morrison, C. E. 2000. Delay in calling for help during myocardial infarction: reasons for the delay and subsequent pattern of accessing care. Heart 84: 137–141.

Luepker, R. V. et al. 2000. Effect of a community intervention on patient delay and emergency medical service use in acute coronary heart disease: The rapid early action for coronary treatment (REACT) trial. Journal of the American Medical Association 284: 60-67.

Lefler, L. L., and Bondy, K.N. 2004. W omen's Delay in seeking Treatm ent with Myocardial Infarction: A m eta-Synthesis. Journal of Cardiovascular Nursing. 19(4): 251-268.

Lesneski, L. 2005. Factors influencing tr eatment delay for patients with acute myocardial infarction. Doctoral Dissertation, Faculty of Nur sing, University of Maryland, Baltimore.

Lundergan, C.F., Reiner, J.S., and Ross, A.M. 2002. How long is too long? Association of time delay to successful reperfusion and ventricular function outcome in acute m yocardial infarction: the case for throm bolytic therapy before angioplasty for acute m yocardial infarction. American Heart Journal 144 (3): 456–62.

Martin, R., Gordon, E.I. and Lounsbury, P. 1998. Gender Disparities in the Attribution of Cardiac-Related Symptoms: Contribution of Common Sense Models of Illness. Health Psychology 17: 346-357.

Martin, R., et al. 2004. Gender Disparitie s in Common Se nse Models of Illness Among Myocardial Infarction Victims. Health Psychology 23: 345-353.

McSweeney, J.C., Cody, M., O'Sullivan, P. Elberson, K. Moser, D.K., and Garvin, B.J. 2003. Women's Early Warning Symptoms of Acute Myocardial Infarction. Circulation 108: 2619-2623.

Meischke, H., Dulberg, E.M., Schaeffer, S.S., Henwood, D.K., Larsen, M.P. and Eisenberg, M.S. 1997. 'Call fast, Call 911': a direct mail campaign to reduce patient delay in acute myocardial infarction. American Journal of Public Health 87(10): 1705-1709.

Mumford, A.D., Warr, K.V., Owen, S.J. and Fraser, A.G. 1999. Delays by patients seeking treatment for acute chest pain: implications for achieving earlier thrombolysis. Postgraduate Medical Journal 75: 90-95.

McKinlay, S., Moser, D. and Dracup, K. 2000. Treatment-seeking behavior for acute myocardial infarction symptoms in North America and Australia. Heart & Lung. 29(4): 237-247.

McKinlay, S., et al. 2004. International comparison of factors associated with delay in presentation for AMI treatment. European Journal of Cardiovascular Nursing. 3: 225-230.

Ministry of Public Health. 2004. Thailand Health Profile 2001-2004. [online] Available from http://www.moph.go.th/ops/health_48/index_eng.htm. [2006, March, 12].

Munro, B. H., and Sexton, D. L. 1984. Path analysis: A method for theory testing. Western Journal of Nursing Research 6 (1): 97-106.

Munro, B. H., and Page, E. B. (1993). Statistical Methods for Health Care Research. 2nd ed. Philadelphia: J.B. Lippincott.

Munro, B. H. 2001. Statistical Methods for Health Care Research. 4th ed. Philadelphia: Lippincott William and Wilkin.

Morgan, D.M. 2003. Effect of incongruency of heart attack symptoms on the decision to seek treatment in a rural population. Doctoral Dissertation Faculty of Nursing, Binghamton University State University of New York.

Mohamed, H.F. 2007. Relationships among Knowledge, Perception, Treatment-Seeking Behavior, Time-To-Treatment and Psychological Distress in Women with First Time Acute Myocardial. Doctoral Dissertation Faculty of Nursing, Case Western Reserve University, USA.

Moser, K. and et al. 2006. Reducing delay in seeking treatment by patients with acute coronary syndrome and stroke. Journal of Cardiovascular Nursing. 22(4): 326-343.

Meischke, H., Mitchell, P., Zapka, J., Goff, D.C. Jr., Smith, K., Henwood D., and et al. 2000. The emergency department experience of chest pain patients and their intention to delay care seeking for acute myocardial infarction. Progressive Cardiovascular Nursing 15:50 –57.

Nuchanarh Krairatcharoen. 2006. Factors influencing the decision to seek treatment of patients with acute myocardial infarction. Master's Thesis, Faculty of Nursing, Mahidol University.

Noureddine, S., et al. 2006. Delay in Seeking Health Care for Acute Coronary Syndromes in a Lebanese Sample. Journal of Trancultural Nursing. October 17(4): 341-348.

Noreddine, S., Arevian, M., Adra, M., and Puzantian, H. 2008. Response to signs and symptoms of acute coronary syndrome: differences between Lebanese men and women. American Journal of Critical Care. January 17 (1): 26-35.

Ottesen, M.M., Dixen, U., Torp-Pederse n, C., and Køber, L. 2004. Prehospital delay in acute coronary syndrome—an analysis of the components of delay. International Journal of Cardiology 96: 97– 103.

Ornmanee Changchaywong. 2002. Relationships between personal factors, setting where symptom occurred, symptom experiences, and prehospital phase of acute myocardial infarction patients. Master's Thesis. Faculty of Nursing, Chulalongkorn University.

Torp-Pedersen, C. and Kober, L. 2004. Prehospital delay in acute coronary syndrome- an analysis of components of delay. International Journal of Cardiology 96: 97-103.

Quinn, J.R. 2005. Delay in Seeking Care for Symptoms of Acute Myocardial Infarction: Applying a Theoretical Model. Research in Nursing & Health 28: 283–294.

Reynolds, N. R., and Alonzo, A. A. 2000a. Self-regulation: The commonsense model of illness representation. In V. H. Rice (Ed.), Handbook of stress, coping, and health: Implications for nursing research, theory and practice Thousand Oaks, CA: Sage :411- 423.

Reynolds, N. R., and Alonzo, A. A. 2000b. The acute myocardial infarction coping model: A midrange theory. In V. H. Rice (Ed.), Handbook of stress, coping, and health: Implications for nursing research, theory and practice Thousand Oaks, CA: Sage : 411-423

Ruston, A., Clayton, J., and Calnan, M. 1998. Patient's action during their cardiac event: Qualitative study exploring differences and modifiable factor. British

Medical Journal 316: 1060-1064.

Riegel, B. et al., 2007. Psychom etric evaluation of the acute coronary syndrom e (ACS) response index. Research in Nursing & Health 30: 584-594.

Raczynski, J.M., Finnegan, J.R. Jr., Zapka, J.G., Meischke, H., Meshack, A., Stone E.J., and et al. 1999. REACT theory based intervention to reduce treatment-seeking delay for acute m yocardial infarction. Rapid Early Action for Coronary Treatment. American Journal of Prevention Medicine 16:325–334.

Rawles, J.M., Metcalfe, M.J., S hirreffs, C., Jennings, K., Kenmure, A.C. 1990. Association of patient delaywith sy mptoms, cardiac enzymes, and outcome in acute myocardial infarction. European Heart Journal 11: 643-8.

Reeder, B., Chockalingam, A., Dagenias, G., MacLean, D., Nair, C., Petrasovits, and et al. 1997.[online] Heart dis ease and stroke., available from http://www.phacaspc.gc.ca/publicat/hdsc97/public_e.html [July 18, 2005]

Rowley, J.M., Hill, J.D., Hampton, J.R., and Mitchell, J.R. 1982. Early reporting of myocardial infarction: impact of an experiment in patient education. British Medical Journal 284:1741-1746.

Rosenfeld, A.G. 2004. Treatment-seeking delay among women with acute myocardial infarction: decision trajectories and their predictors. Nursing Research 53(4): 225-36.

Ting, H.H., Yang, E.H. and Rihal, C.S. 2006. Narrative Review: reperfusion strategies for ST-segment elevation myocardial Infarction. Annals of Internal Medicine 145: 610-617.

Tabachnick, B. G., and Fidell, L. S. 2001. Using multivariate statistics (4th ed.). Boston: Allyn & Bacon.

Tababnick, B. G. and Fidell, L. S. (2007). Using Multivariate Statistics. Boston: Pearson Education.

Thai Acute Coronary Syndrom e Registry (TACSR). 2007. The Heart Association of Thailand under the Royal Pa tronage of H.M. the King (สำนักงานวิจัย สมาคมแพทย์โรคหัวใจแห่งประเทศไทย ในพระบรมราชูปถัมภ์ 388 สุโขทัยแมนชัน ถนนสุโขทัย แขวงจิตรดา ดุสิต กรุงเทพฯ 10300

Turi, Z.G. et al., 1986. Im plications for acute intervention related to tim e of hospital arrival in acu te myocardial infarction. The American Journal of Cardiology. (1 August) 58(3): 203-209.

Wallentin, L., Goldstein, P., and Armstrong, P.W. 2003. Efficacy and safety of tenecteplase in combination with low-molecular-weight heparin enoxaparin or unfractionated heparin in the prehos pital setting: the Assessment of the Safety and Efficacy of a New Thro mbolytic Regimen (ASSENT)-3 PLUS randomized trial in acute myocardial infarction. Circulation 108:135-42.

Walsh, J.C., Lynch, M., Murphy, A.W. and Daly, K. 2004. Factors influencing the decision to seek tre atment for symptoms of ac ute myocardial infarction. Journal of Psychosomatic Research 56(1): 67-73.

Welsh, R.C., Ornato, J., and Armstrong, P.W. 2003. Prehospital management of acute ST-elevation myocardial infarction: a time for reappraisal in North America. American Heart Journal 145: 1– 8.

Wu, Y., Zhang, Y., Li, Y. Q., Hong, B. L., and Huang, C. X. 2004. Factors associated with the extent of care-seeking delay for patients with acute myocardial infarction in Beijing. Chinese Medical Journal 117, 1772-1777.

Schmidt, S.B., and Borsch, M.A. 1990. The prehospital phase of acute myocardial infarction in the era of thrombolysis. American Journal Cardiology 6 5: 1411–1415.

Sue Krol. 1998. Delay in the behavior of health seeking activity for individual with symptoms of acute myocardial infarction: is there a gender difference. Master's Thesis, Faculty of Nursing, Michigan Stage University, USA.

Sunee Auimsirinukul. 1997. Factors Associated with Delay in Seeking Treatment in Response to Symptoms of Patients with Acute Ischemic Syndromes. Master's Thesis, Faculty of Nursing, Mahidol University

ing, R.W. 2009. Ischemic Time the New Gold Standard for ST-Segment Elevation Myocardial Infarction Care. Journal of the American College of Cardiology 54 (23): 2154-56.

Steg, P.G., et al. 2003. Impact of time to treatment on mortality after prehospital fibrinolysis or primary angioplasty: data from the CAPTIM randomized clinical trial. Circulation 108(23): 2851-2856.

Sheifer, S.E. et al., 2000. Time to Presentation with Acute Myocardial Infarction in the Elderly Associations with Race, Sex, and Socioeconomic Characteristics. Circulation 102: 1651-1656.

Somchit Hanucharurnkul et al. 1998. Factors associated with delay in seeking treatment in response to symptoms of patients with acute ischemic syndrome. Thai Journal of Nursing Research July-December: 32-52.

Zerwic, J.J., King, K.B., and Wlasowicz, G.S. 1997. Perceptions of patients with cardiovascular disease about the causes of coronary artery disease. Heart Lung 26: 92–98.

Zerwic, J. J. 1999. Patient delay in seeking treatment for acute myocardial infarction symptoms. Journal of Cardiovascular Nursing 13(3): 21-32.

Zerwic, J. J., Ryan, C. J., DeVon, H. A., and Drell, M. J. 2003. Treatment seeking for acute myocardial infarction symptoms: Differences in delay across sex and race. Nursing Research *52*:159-167.

APPENDICES

APPENDIX A

APPROVAL OF DISSERTATION PROPOSAL

ประกาศ คณะพยาบาลศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย
เรื่องการอนุมัติหัวข้อดุษฎีนิพนธ์ ครั้งที่ 3/2550 ประจำปีการศึกษา 2550

นิสิตผู้ทำวิจัยและอาจารย์ที่ปรึกษาดุษฎีนิพนธ์

รหัสนิสิต	4877975536
ชื่อ-นามสกุล	นายสุรชาติ สิทธิปกรณ์
สาขา	พยาบาลศาสตร์ (นานาชาติ)
อาจารย์ที่ปรึกษา	ศาสตราจารย์ ดร. วีณา จีระแพทย์
อาจารย์ที่ปรึกษาร่วม	ผู้ศาสตราจารย์ ดร. ชนกพร จิตปัญญา
ชื่อหัวข้อดุษฎีนิพนธ์	โมเดลเชิงสาเหตุของการเข้ามารับการรักษาช้าในผู้ป่วยโรคกล้ามเนื้อหัวใจตายเฉียบพลัน A CAUSAL MODEL OF DELAY IN SEEKING TREATMENT AMONG THAI PATIENTS WITH ACUTE MYOCARDIAL INFARCTION
ครั้งที่อนุมัติ	3/2550
ระดับ	ปริญญาเอก

ประกาศ ณ วันที่ 20 พฤษภาคม พ.ศ. 2551

(รองศาสตราจารย์ ร.ต.อ.หญิง ดร. ยุพิน อังสุโรจน์)
คณบดีคณะพยาบาลศาสตร์

APPENDIX B

APPROVAL OF THE IRB

COA No. 830/2008
IRB No. 423/51

INSTITUTIONAL REVIEW BOARD
Faculty of Medicine, Chulalongkorn University
1873 Rama 4 Road, Patumwan, Bangkok 10330, Thailand, Tel 662-256-4455 ext 14, 15

Certificate of Approval

The Institutional Review Board of the Faculty of Medicine, Chulalongkorn University, Bangkok, Thailand, is in full compliance with the International guidelines for human research protection as Declaration of Helsinki, The Belmont Report, CIOMS Guideline and International Conference on Harmonization in Good Clinical Practice (ICH-GCP)

Study Title : A causal Model: Delay in Jeeking treatment emong Thai patients with Acute myocardial Inferachion

Study Code : -

Study Center : Chulalongkorn University

Principal Investigator : Surachat Sittipakorn

Signature: ..... **Signature:** .....
(Emeritus Professor Anek Aribarg, M.D.) **(Associate Professor Sopit Thamaree)**
Chairman of The Institutional Review Board **Committee and Secretary of The Institutional Review Board**

Date of Approval : November 26, 2008

Approval Expire Date : November 26, 2009

Approval is granted subject to the following conditions: (see back of this Certificate)

COA No. 830/2008
IRB No.423/51

คณะกรรมการจริยธรรมการวิจัยในคน
คณะแพทยศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย
1873 ถ.พระราม 4 เขตปทุมวัน กรุงเทพฯ 10330 โทร. 0-2256-4455 ต่อ 14, 15

เอกสารรับรองโครงการวิจัย

คณะกรรมการจริยธรรมการวิจัยในคน คณะแพทยศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย ดำเนินการให้การรับรองโครงการวิจัยตามแนวทางหลักจริยธรรมการวิจัยในคนที่เป็นมาตรฐานสากลได้แก่ Declaration of Helsinki, The Belmont Report, CIOMS Guideline และ International Conference on Harmonization in Good Clinical Practice หรือ ICH-GCP

ชื่อโครงการ : โมเดลเชิงสาเหตุของการเข้ารับการรักษาช้าในผู้ป่วยโรคกล้ามเนื้อหัวใจตาย เฉียบพลัน

เลขที่โครงการวิจัย : -

ผู้วิจัยหลัก : นายสุชาติ สิทธิปกรณ์

สังกัดหน่วยงาน : คณะพยาบาลศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย

รายงานความก้าวหน้า : ส่งรายงานความก้าวหน้าอย่างน้อย 1 ครั้ง/ปี หรือส่งรายงานฉบับสมบูรณ์หากดำเนินโครงการเสร็จสิ้นก่อน 1 ปี

ลงนาม .....
(ศาสตราจารย์กิตติคุณนายแพทย์เอนก อารีพรรค)
ประธาน
คณะกรรมการจริยธรรมการวิจัยในคน

ลงนาม.....
(รองศาสตราจารย์ โสภิต ธรรมอารี)
กรรมการและเลขานุการ
คณะกรรมการจริยธรรมการวิจัยในคน

วันที่รับรอง : 26 พฤศจิกายน 2551
วันหมดอายุ : 26 พฤศจิกายน 2552

ทั้งนี้ การรับรองนี้มีเงื่อนไขดังที่ระบุไว้ด้านหลังทุกข้อ (ดูด้านหลังของเอกสารรับรองโครงการวิจัย)

ที่ จพ.ผก. 599 / 2552

สภากาชาดไทย
The Thai Red Cross Society

โรงพยาบาลจุฬาลงกรณ์
1873 ถนนพระรามที่ 4
แขวงปทุมวัน เขตปทุมวัน
กรุงเทพฯ 10330

13 กุมภาพันธ์ 2552

เรื่อง ยินดีให้นิสิตเข้ามาเก็บข้อมูลการวิจัย
เรียน **คณบดีคณะพยาบาลศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย**
อ้างถึง หนังสือที่ ศธ 0512.11 / 2183 ลงวันที่ 30 ตุลาคม 2551

ตามหนังสือที่อ้างถึง คณะพยาบาลศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย แจ้งว่า **นายสุรชาติ สิทธิปกรณ์** นิสิตชั้นปริญญาดุษฎีบัณฑิต คณะพยาบาลศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย ได้จัดทำวิจัยเพื่อเสนอเป็นดุษฎีนิพนธ์ เรื่อง " โมเดลเชิงสาเหตุของการเข้ามารับการรักษาช้าในผู้ป่วยโรคกล้ามเนื้อหัวใจตายเฉียบพลัน" และในการนี้ ได้ขออนุญาตเข้ามาเก็บข้อมูลเพื่อทำการวิจัยที่โรงพยาบาลจุฬาลงกรณ์ ดังรายละเอียดแจ้งแล้ว นั้น

โรงพยาบาลจุฬาลงกรณ์พิจารณาแล้ว **ไม่ขัดข้อง** ยินดีให้ดำเนินการตามที่ขอมา โดยกรุณาติดต่อประสานงานได้ที่ฝ่ายการพยาบาล 0-2256-4360 ฝ่ายอายุรศาสตร์ 0-2256-4246 ในวันและเวลาราชการ

อนึ่ง ก่อนเข้าพบบุคคลดังกล่าวขอให้นำบัตรนักศึกษาหรือบัตรประจำตัวประชาชนพร้อมจดหมายฉบับนี้มาติดต่อขอรับบัตรประจำตัวผู้เก็บข้อมูล ณ ฝ่ายเลขานุการ ตึกอำนวยการชั้นล่าง ห้องหมายเลข 2

จึงเรียนมาเพื่อทราบ

ขอแสดงความนับถือ

(รองศาสตราจารย์นายแพทย์ชาญวิทย์ โคธีรานุรักษ์)
รองผู้อำนวยการฯ ฝ่ายยุทธศาสตร์และสารสนเทศ
ปฏิบัติการแทน ผู้อำนวยการโรงพยาบาลจุฬาลงกรณ์

กลุ่มงานร่างโต้ตอบเอกสาร ฝ่ายเลขานุการ
โทรศัพท์ : 0-2256-4312
โทรสาร : 0-2256-4368

ที่ 0037 (อกพ)/ ๕๖

องค์กรแพทย์ โรงพยาบาลตำรวจ
สำนักงานแพทย์ใหญ่
492/1 ถนนพระราม 1 แขวงวังใหม่
เขตปทุมวัน กรุงเทพฯ 10330

๑๕ พฤศจิกายน 2551

เรื่อง อนุญาตให้เก็บรวบรวมข้อมูลการวิจัย

เรียน รองศาสตราจารย์ ร.ต.อ.หญิง ดร.ยุพิน อังสุโรจน์

ตามที่ท่านได้ขออนุญาตให้ นายสุรชาติ สิทธิปกรณ์ เก็บรวบรวมข้อมูลเพื่อเสนอเป็นดุษฎีนิพนธ์เรื่อง "โมเดลเชิงสาเหตุของการเข้ามารับการรักษาช้าในผู้ป่วยโรคกล้ามเนื้อหัวใจตายเฉียบพลัน" นั้น

คณะอนุกรรมการจริยธรรมการวิจัยในมนุษย์ องค์กรแพทย์ โรงพยาบาลตำรวจ ได้พิจารณาแล้วเห็นว่าเป็นไปตามกฎเกณฑ์ของแพทยสภา ว่าด้วยเรื่องการวิจัยในมนุษย์ จึงอนุญาตให้เก็บรวบรวมข้อมูลดังกล่าวได้

จึงเรียนมาเพื่อโปรดทราบ

ขอแสดงความนับถือ

พันตำรวจเอก

(สุพัฒน์ เลาหะวัฒนะ)
ประธานอนุกรรมการจริยธรรมการวิจัยในมนุษย์
โรงพยาบาลตำรวจ

องค์กรแพทย์ โรงพยาบาลตำรวจ
โทร.0-2207-6000 ต่อ 6764 , 6765

Q048q/51_Exp

คณะอนุกรรมการพิจารณาโครงการวิจัยกรมแพทย์ทหารบก
ชั้น 5 อาคารพระมงกุฎเกล้าเวชวิทยา วิทยาลัยแพทยศาสตร์พระมงกุฎเกล้า
315 ถนน ราชวิถี เขต ราชเทวี กรุงเทพฯ 10400 โทรศัพท์ (662)354-7600-28 ต่อ 94270 โทรสาร (662)354-9011

ที่ ๗๒๖ /2551

วันที่ ๒๘ พฤศจิกายน 2551

เรื่อง แจ้งผลการพิจารณาโครงการวิจัย

เรียน นายสุรชาติ สิทธิปกรณ์ นิสิตคณะพยาบาลศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย

สิ่งที่ส่งมาด้วย - แบบรายงานสรุปผลการวิจัย

ตามที่ ท่านได้ส่งโครงการวิจัย เรื่อง "โมเดลเชิงสาเหตุของการเข้ามารับการรักษาช้าของผู้ป่วยโรคกล้ามเนื้อหัวใจตายเฉียบพลัน" [A CAUSAL MODEL: DELAY IN SEEKING THEATMENT AMONG THAI PATIENT WITH ACUTE MYOCARDIAL INFARCTION] เพื่อพิจารณาระเบียบวิธีวิจัย และจริยธรรมจากคณะอนุกรรมการพิจารณาโครงการวิจัย กรมแพทย์ทหารบก เพื่อประกอบการพิจารณาสนับสนุนการเก็บข้อมูล นั้น คณะอนุกรรมการพิจารณาโครงการวิจัย กรมแพทย์ทหารบก อนุมัติเมื่อวันที่ 25 พฤศจิกายน 2551 เมื่อท่านได้ทำวิทยานิพนธ์เสร็จสิ้นลง กรุณาส่งวิทยานิพนธ์ของท่านและแบบรายงานสรุปผลการวิจัย มายังคณะอนุกรรมการฯ 1 ชุด

จึงเรียนมาเพื่อทราบ

ขอแสดงความนับถือ

พันเอกหญิง

(เยาวนา ธนะพัฒน์)

ประธานคณะอนุกรรมการพิจารณาโครงการวิจัย กรมแพทย์ทหารบก

2 PRANNOK Rd. BANGKOKNOI
BANGKOK 10700

Tel. (662) 4196405-6
FAX (662) 4196405

MAHIDOL UNIVERSITY
Since 1888

Siriraj Institutional Review Board

Certificate of Approval

COA no.Si 041/2009

Protocol Title : A Causal Model of Delay in Seeking Treatment Among Thai Patients with Acute Mycardial Infarction

Protocol number : 748/2551(EC2)

Principal Investigator/Affiliation: Mr. Surachat Sittipakorn
Faculty of Nursing, Chulalongkorn University

Research site : Faculty of Medicine Siriraj Hospital

Approval includes :

1. EC Submission Form
2. Proposal
3. Participant Information Sheet for Doctor
4. Participant Information Sheet
5. Informed Consent Form
6. Questionnaire

Approval date : January 28, 2009

Expired date : January 27, 2010

This is to certify that Siriraj Ethics Committee is in full Compliance with International Guidelines For Human Research Protection such as the Declaration of Helsinki, the Belmont Report, CIOMS Guidelines and the International Conference on Harmonization in Good Clinical Practice (ICH-GCP).

.....

Prof. Jariya Lertakyamanee, M.D.
Chairperson

February 3, 2009
date

T. Kulthanan
.....

(Clin. Prof. Teerawat Kulthanan, M.D.)
Dean of Faculty of Medicine Siriraj Hospital

February 5,2009
date

หน่วยพิมพ์โรงพยาบาลศิริราช 2341 / 3,000 แผ่น / ก.ย 51 / Mat. 10023252

2 ถนนพรานนก บางกอกน้อย
กรุงเทพฯ 10700

โทร (662) 4196405-6
โทรสาร (662) 4196405

คณะกรรมการจริยธรรมการวิจัยในคน คณะแพทยศาสตร์ศิริราชพยาบาล

เอกสารรับรองโครงการวิจัย

หมายเลข Si 041/2009

ชื่อโครงการภาษาไทย : โมเดลเชิงสาเหตุของการเข้ารับการรักษาช้าในผู้ป่วยโรคกล้ามเนื้อหัวใจตายเฉียบพลัน

รหัสโครงการ : 748/2551(EC2)

หัวหน้าโครงการ / หน่วยงานที่สังกัด : นายสุรชาติ สิทธิปกรณ์
คณะพยาบาลศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย

สถานที่ทำวิจัย : คณะแพทยศาสตร์ศิริราชพยาบาล

เอกสารที่รับรอง :

1. แบบเสนอโครงการวิจัยเพื่อขอรับการพิจารณาจากคณะกรรมการจริยธรรมการวิจัยในคน
2. โครงร่างการวิจัย
3. เอกสารชี้แจงสำหรับแพทย์เจ้าของไข้
4. เอกสารชี้แจงผู้เข้าร่วมการวิจัย
5. หนังสือแสดงเจตนายินยอมเข้าร่วมการวิจัย
6. แบบสอบถาม

วันที่รับรอง : 28 มกราคม 2552

วันหมดอายุ : 27 มกราคม 2553

คณะกรรมการจริยธรรมการวิจัยในคน คณะแพทยศาสตร์ศิริราชพยาบาล มหาวิทยาลัยมหิดล ดำเนินการให้การรับรองโครงการวิจัยตามแนวทางหลักจริยธรรมการวิจัยในคนที่เป็นสากล ได้แก่ Declaration of Helsinki, the Belmont Report, CIOMS Guidelines และ the International Conference on Harmonization in Good Clinical Practice (ICH-GCP).

ลงนาม .....
(ศาสตราจารย์แพทย์หญิงจริยา เลิศอรรฆยมณี)
ประธานคณะกรรมการจริยธรรมการวิจัยในคน
วันที่ 3 กุมภาพันธ์ 2552

ลงนาม .....
(ศาสตราจารย์คลินิกนายแพทย์ธีรวัฒน์ กุลหนันทน์)
คณบดี คณะแพทยศาสตร์ศิริราชพยาบาล
วันที่ 5 กุมภาพันธ์ 2552

หน่วยพิมพ์โรงพยาบาลศิริราช 2342 / 3,000 แผ่น / ก.ย 51 / Mat. 10023253

เอกสารรับรองโครงการวิจัยที่เกี่ยวกับการวิจัยในคน
โรงพยาบาลราชวิถี

เอกสารเลขที่ 35 /2552

ชื่อโครงการ (ภาษาไทย) "โมเดลเชิงสาเหตุของการเข้ามารับการรักษาช้าในผู้ป่วยโรคกล้ามเนื้อหัวใจตายเฉียบพลัน"

(ภาษาอังกฤษ) A causal model: delay in seeking treatment among Thai patient with acute myocardial infarction

ชื่อหัวหน้าโครงการ นายสุรชาติ สิทธิปกรณ์
ตำแหน่ง -
สังกัดหน่วยงาน นิสิตชั้นปริญญาดุษฎีบัณฑิต คณะพยาบาลศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย

โครงการวิจัยได้ผ่านการพิจารณาและรับรองโดยคณะกรรมการจริยธรรมการวิจัย โรงพยาบาลราชวิถี เมื่อวันที่ 19 เดือนมีนาคม พ.ศ. 2552

ลงนาม .....
(รศ.คลินิก (พิเศษ)นพ.อุดม ไกรฤทธิชัย)
ประธานคณะกรรมการจริยธรรมการวิจัย

ลงนาม .....
(นางวารุณี จินารัตน์)
ผู้อำนวยการโรงพยาบาลราชวิถี

APPENDIX C

LIST OF THE EXPERTS

LIST OF EXPERTS

1. **Professor Rungroj Krittayapong**, M.D.
   Faculty of Medicine, Mahidol University
2. **Associate Professor Dr. Kanaungnit Pongthavornkamol**
   Faculty of Nursing, Mahidol University
3. **Assistant Professor Dr. Chuanpit Tumnong**
   Faculty of Nursing, Khon Kaen University
4. **Assistant Professor Dr. Wasana Ruisungnoen**
   Faculty of Nursing, Khon Kaen University
5. **Miss. Aem-Orn Saengsriri** PhD. Student. RN, MSN,
   APN(Cardiovascular) CCU Department,
   King Chulalongkorn Memorial Hospital

APPENDIX D

INFORMED CONSENT FORM AND

PARTICIPANTS INFORMATION SHEET

เอกสารชี้แจงสำหรับแพทย์เจ้าของไข้

เรื่อง ขออนุญาตเก็บรวมรวมข้อมูลการวิจัยจากผู้ป่วยในการดูแลของท่าน

เรียน แพทย์เจ้าของไข้ผู้ป่วยโรคกล้ามเนื้อหัวใจตายเฉียบพลันทุก ๆท่าน

เนื่องด้วย ข้าพเจ้านายสุรชาติ สิทธิปกรณ์ นิสิตปริญญาเอก คณะพยาบาลศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย กำลังดำเนินการเก็บข้อมูลเพื่อประกอบการทำดุษฎีนิพนธ์ เรื่อง "โมเดลเชิงสาเหตุของผู้ป่วยที่เข้ามารับการรักษาช้าในผู้ป่วยโรคกล้ามเนื้อหัวใจตายเฉียบพลัน" ซึ่งในขณะนี้อยู่ในระหว่างรับการรักษาจากท่าน โดยการศึกษาครั้งนี้มีวัตถุประสงค์เพื่อ ศึกษาประสบการณ์และการตอบสนองต่ออาการของโรคกล้ามเนื้อหัวใจตายเฉียบพลัน รวมทั้งปัจจัยอื่น ๆ ที่เกี่ยวข้อง ซึ่งมีประโยชน์ที่คาดว่าจะได้รับคือ ข้อมูลพื้นฐานจากท่านในการวางแผนช่วยเหลือผู้ป่วยโรคกล้ามเนื้อหัวใจตายเฉียบพลันต่อไป โดยจะดำเนินการเก็บข้อมูลในหอผู้ป่วยอายุรกรรม หอผู้ป่วยหนักและแผนกผู้ป่วยนอก ห้องตรวจโรคหัวใจ โดยมีเกณฑ์การคัดเลือกประชากร (Inclusion criteria) ได้แก่ ได้รับการวินิจฉัยจากแพทย์ว่าเป็นโรคกล้ามเนื้อหัวใจตายเฉียบพลัน, อายุมากกว่า 20 ปี, **ระดับสัญญาณชีพ คงที่**, มีอาการแสดงของภาวะกล้ามเนื้อหัวใจตายเฉียบพลันก่อนมาโรงพยาบาลครั้งนี้, ไม่มีอาการเจ็บปวดจากโรค, พูดไทยและเข้าใจภาษาไทย, สนใจที่จะเข้าร่วมในงานวิจัยครั้งนี้ **โดยจะเก็บข้อมูลในขณะที่แพทย์ผู้ทำการรักษามีการวางแผนที่จะจำหน่ายผู้ป่วย** และมีเกณฑ์การคัดออกประชากร (Exclusion criteria) ได้แก่มีประวัติของโรคทางด้านจิตเวช, มีความจำเลอะเลือน, ได้รับการผ่าตัด เนื่องจากภาวะของโรคหัวใจ, ได้รับภาวะแทรกซ้อนที่รุนแรง เช่น กำลัง shock และเป็นโรคกล้ามเนื้อหัวใจตายเฉียบพลันจากสาเหตุของอาการแสดงของโรคอื่น ๆ นำมาก่อน ซึ่งจะมีผู้เข้าร่วมครั้งนี้จากกโรงพยาบาลศิริราช จำนวน 40 คน จากทั้งสิ้น 240 คน ซึ่งจะใช้ระยะเวลาการดำเนินเก็บข้อมูลประมาณ 6 เดือนหลังจากได้รับการอนุมัติจากคณะกรรมการการวิจัยในคนให้ผ่านการพิจารณาจริยธรรมฯ

จึงเรียนมาเพื่อทราบและโปรดพิจารณา

(นายสุรชาติ สิทธิปกรณ์)
นิสิตพยาบาลศาสตร์ดุษฎีบัณฑิต จุฬาลงกรณ์มหาวิทยาลัย
ผู้วิจัย

Patient/participant information sheet

1. Title: A causal model of delay in seeking treatment among Thai patients with Acute Myocardial Infarction

2. Researcher Name: Mr. Surachat Sittipakorn

3. Office: Faculty of Nursing, Maha Sarakham Uniersity, Maha Sarakham, Thailand

Office: 043-754-357 Home: 043-970-510

Mobile Phone**:** 089-710-0456 E-mail: Surachat_sit@hotmail.com

4. Information relevant to informed consent form of this study consists of:

I am a graduate student in nursing science at Chulalongkorn University, doing a doctoral dissertation on delay in seeking treatment among Thai patients with acute myocardial infarction. The purpose of this information is to tell you about the researcher and to allow you to make a clear decision about whether you would like to participate or not.

4.1 This study focuses on the examination the causal relationships of factors related to delay in seeking treatment in Thai patient with acute myocardial infarction. The objectives of the study are to examine the causal relationships among symptom congruence, attribution of symptom to the heart, perception of symptom seriousness, emotional response to symptom, alternative coping strategies, and time to seek treatment in Thai AMI patients. And to develop and test a causal model of delay in seeking treatment derived from The Self-Regulation Model of Illness Behavior Conceptual Model in Thai AMI patients.

4.2. The benefits of this study will help nurse and health care provides to understand the direct and indirect effect of the predictors factors on delay in seeking treatment in Thai AMI patients. The finding will provide a scientifically-based guideline for health care providers, multidisciplinary teams and policy makers to provide suitable support and guidance to reduces time of delay in seeking treatment among AMI patients. Nurse will be able to use the finding of this study to develop research and nursing intervention to help AMI patients and patients who have risk for heart attack to save patients lives.

4.3 Quantitative approach will be employed in this study. The participants are Thai patients who are diagnosed with AMI. Age equal or more than 20 years old, and has hemodinamically stable. Able to communicate in Thai with researcher and willing to participate in this study. The patients will be excluded from the study if patients have a history of mental illness, which were cognitively impaired, have a surgically treated MI, have major medical complications, physically unstable at 72 hours after admission.

4.4 Research setting are medical department ward, CCU, ICU of five Hospital are Chulalongkorn Hospital, Police Hospital, Pramongutklaw Hospital, Rajavetee Hospital, and Siriraj Hospital

4.5 After get permission from research settings, researcher looking for AMI patients who meet criteria from patients' data record. Researcher also record patients' diagnosis, time of symptom onset and time to arrived at the hospital

4.6. Participants will be asked to complete the questionnaires about personal data, symptom congruence, attribution symptom to the heart, perception of seriousness of symptom, emotional response to symptom, alternative coping strategies, and response to symptom questionnaire. It will take 10-15 minute for this process.

4.7 It will be no the participant's name on each questionnaire. There coded data and questionnaires will be kept in the locked cabinet. Publication will not contain information that identified name of the participants.

4.8 The participants can withdraw from the study at any point of time without negative effect on the participants and their families.

4.9 Each participant has not received any payment.

4.10 The researcher will be available for all participants 24 hours when they have some questions regarding the study. They can contact the researcher by mobile phone: 08-9710-0456.

4.11 The total number of participants in this study will be around 220.

ข้อมูลสำหรับประชากรตัวอย่างหรือผู้มีส่วนร่วมในการวิจัย

(Participant information sheet)

1. ชื่อโครงการวิจัย โมเดลเชิงสาเหตุของการเข้ามารับการรักษาช้าของผู้ป่วยโรคกล้ามเนื้อหัวใจตายเฉียบพลัน

2. ชื่อผู้วิจัย นายสุรชาติ สิทธปกรณ์ นิสิตคณะพยาบาลศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย

3. สถานที่ปฏิบัติงาน คณะพยาบาลศาสตร์ มหาวิทยาลัยมหาสารคาม

ต.ขามเรียง อ. กันทรวิชัย จ. มหาสารคาม 44150 โทรศัพท์ที่ทำงาน 043-754341-49

โทรศัพท์ที่บ้าน 043-970-510 โทรศัพท์เคลื่อนที่ 089-710-0456

E-mail: surachat_sit@hotmail.com

4. คำชี้แจงของผู้วิจัย

ข้าพเจ้าชื่อนายสุรชาติ สิทธปกรณ์ นักศึกษาปริญญาเอก สาขาพยาบาลศาสตร์ คณะพยาบาลศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย กำลังสนใจและทำการวิจัยเกี่ยวกับ ความล่าช้าในการเข้ามารับการรักษาของผู้ป่วยโรคกล้ามเนื้อหัวใจตายเฉียบพลัน อนึ่ง วัตถุประสงค์ของเอกสารฉบับนี้จัดทำเพื่อบอกเล่าเกี่ยวกับข้อมูลของผู้ทำวิจัยและการดำเนินการวิจัย ซึ่งท่านจะสามารถเข้าใจและตัดสินใจแสดงความประสงค์ในการเข้าร่วมหรือไม่เข้าร่วมในการวิจัยครั้งนี้ได้

4.1 โครงการวิจัยนี้มุ่งค้นหาและอธิบายเกี่ยวกับ ความล่าช้าในการเข้ามารับการรักษาของผู้ป่วยโรคกล้ามเนื้อหัวใจตายเฉียบพลันโดยมี วัตถุประสงค์ของการวิจัย เพื่ออธิบายปัจจัยที่เป็นสาเหตุที่ส่งผลต่อความล่าช้าในการเข้ามารับการรักษาของผู้ป่วยโรคกล้ามเนื้อหัวใจตายเฉียบพลัน และเพื่อพัฒนาความรู้และแบบจำลองเชิงสาเหตุของความล่าช้าในการเข้ามารับการรักษาของผู้ป่วยโรคกล้ามเนื้อหัวใจตายเฉียบพลัน

4.2. ประโยชน์ของการวิจัยนี้จะช่วยให้พยาบาลและบุคลากรด้านสุขภาพเข้าใจถึงปัจจัยทั้งทางตรงและทางอ้อมที่มีผลต่อความล่าช้าในการเข้ามารับการรักษาของผู้ป่วยโรคกล้ามเนื้อหัวใจตายเฉียบพลัน และผลการวิจัยช่วยเป็นพื้นฐานและแนวทาง สำหรับบุคลากรทางด้านสุขภาพ,ทีมการรักษาพยาบาล และผู้ที่มีบทบาทในการตัดสินใจวางแผนในการให้การสนับสนุน ช่วยเหลือ เพื่อ

นำไปสู่การลดอัตราตายของผู้ป่วยกล้ามเนื้อหัวใจตายฉียบพลัน โดยนำไปเป็นแนวทางในการพัฒนางานวิจัย และจัดรูปแบบกิจกรรมทางการพยาบาลที่เหมาะสมเพื่อลดระยะเวลาในการเข้ามารับการรักษาในผู้ป่วยโรคกล้ามเนื้อหัวใจตายเฉียบพลัน

4.3 .การวิจัยนี้เป็นการวิจัยเชิงปริมาณ ดำเนินการเก็บข้อมูลจากผู้ป่วยที่ได้รับการวินิจฉัยจากแพทย์ว่าเป็นโรคกล้ามเนื้อหัวใจตายเฉียบพลัน มีอายุตั้งแต่ 20 ปีขึ้นไป ระดับความดันเลือดและอัตราการเต้นของหัวใจปกติ เข้ารับการรักษาในโรงพยาบาลไม่น้อยกว่า 24 ชั่วโมง และไม่มากว่า 72 ชั่วโมง ไม่มีภาวะเจ็บปวดจากอาการของโรค สามารถสื่อสารด้วยภาษาไทยได้ และ ยินดีให้ความร่วมมือในการศึกษาวิจัยครั้งนี้ จะไม่ทำการเก็บรวบรวมข้อมูลในผู้ป่วยที่เคยได้รับการวินิจฉัยว่าเป็นผู้ป่วยที่มีปัญหาด้านสุขภาพจิต มีสติสัมปชัญญะไม่สมประกอบ หรือการรับรู้ผิดปกติ ผู้ที่ได้รับการผ่าตัดหัวใจเพื่อการรักษา มีภาวะฉุกเฉินทางอายุรกรรมอื่น ๆ มีระดับสัญญาณชีพไม่คงที่หลังเข้ารับการรักษา 72 ชั่วโมง และในผู้ที่กล้ามเนื้อหัวใจขาดเลือดขณะนอนในโรงพยาบาลด้วยสาเหตุอื่น ๆ

4.4 สถานที่เก็บรวบรวมข้อมูล คือแผนกผู้ป่วยใน หอผู้ป่วยอายุรกรรม หอผู้ป่วยวิกฤต และหอผู้ป่วยวิกฤตโรคหัวใจ ของโรงพยาบาลจุฬาลงกรณ์, โรงพยาบาลตำรวจ, โรงพยาบาลพระมงกุฎเกล้า, โรงพยาบาลราชวิถี, และโรงพยาบาลศิริราช

4.5 หลังได้รับอนุมัติให้เก็บรวบรวมข้อมูลจากโรงพยาบาลและสถาบันต่าง ๆ แล้ว ข้าพเจ้าจะขออนุญาติหัวหน้าหอผู้ป่วย หอผู้ป่วยอายุรกรรม หอผู้ป่วยวิกฤต และหอผู้ป่วยวิกฤตโรคหัวใจ เพื่อตรวจสอบเวชระเบียนของผู้ป่วยที่กำลังรับการรักษา เพื่อศึกษาและบันทึกผลการวินิจฉัยโรค โรคร่วมอื่น ๆ การรักษาที่ได้รับในขณะนั้น และผลการตรวจพิเศษต่าง ๆ เวลาที่ผู้ป่วยมาถึงโรงพยาบาล และคัดเลือกผู้ป่วยที่มีคุณสมบัติตามเกณฑ์มาเป็นผู้มีส่วนร่วมในการวิจัย และข้าพเจ้าจะสอบถามความสมัครใจก่อนให้ผู้มีส่วนร่วมในการวิจัยตอบแบบสอบถามอีกครั้ง

4.6 ผู้มีส่วนร่วมในการวิจัยจะต้องตอบแบบสอบถามเกี่ยวกับ ข้อมูลส่วนบุคคล แบบวัดความเข้ากันได้ของอาการ แบบสำรวจการคาดการณ์สาเหตุเกี่ยวกับโรคหัวใจ แบบประเมินการใช้รูปแบบการเผชิญปัญหา แบบประเมินการตอบสนองต่ออาการโรคกล้ามเนื้อหัวใจตายเฉียบพลัน แบบประเมินช่วงเวลาตั้งแต่เกิดอาการจนเข้ารับการรักษา โดยใช้เวลาในการตอบแบบสอบถามประมาณ 20-30 นาที

4.7 การรักษาความลับของผู้มีส่วนร่วมในการวิจัย โดยจะไม่ระบุชื่อผู้มีส่วนร่วมฯ ในแบบสอบถาม ข้อมูลที่ได้จากแบบสอบถามจะนำไปวิเคราะห์โดยการลงรหัส และวิเคราะห์ในภาพรวมไม่แยกเฉพาะราย แบบสอบถามจะถูกจัดเก็บไว้ในที่ปลอดภัยและเป็นความลับ ผลการวิจัยจะนำเสนอในภาพรวม

4.8 ผู้มีส่วนร่วมในการวิจัยสามารถปฏิเสธหรือถอนตัวจากโครงการวิจัยนี้ได้ตลอดเวลา โดยจะไม่มี ผลเสียใดๆ ต่อผู้มีส่วนร่วม ฯ

4.9 การวิจัยครั้งนี้ไม่มีการจ่ายค่าตอบแทนแก่ผู้มีส่วนร่วมในการวิจัย

4.10 ท่านสามารถซักถามเพิ่มเติมได้ก่อนลงนามในใบยินยอม โดยข้าพเจ้ายินดีตอบคำถามในสิ่งที่ท่านสนใจและเกี่ยวข้องในการวิจัยครั้งนี้ ลายมือชื่อของท่านจะแสดงให้ทราบว่าท่านได้อ่านข้อความในเอกสาร รับทราบและตัดสินใจเข้าร่วมในการวิจัยครั้งนี้แล้ว หากท่านมีคำถามหรือ ข้อสงสัย รวมถึงประสงค์ที่จะถอนตัวจากการวิจัยครั้งนี้ ท่านสามารถซักถามหรือแจ้งความต้องการของท่านแก่ผู้วิจัยได้ตลอดเวลา โดยติดต่อได้ทางหมายเลขโทรศัพท์เคลื่อนที่ 08-9710-0456

4.11 จำนวนผู้มีส่วนร่วมในการวิจัยที่จะใช้ในการวิจัยโดยประมาณ 160 คน

Informed Consent Form

Title: A Causal Model: Delay in Seeking Treatment among Thai Patients with Acute Myocardial Infarction

Code number: Participant…….

I was informed by the nurse researcher namely, Surachat Sittipakorn, Ph.D. student, Doctor of Philosophy in Nursing Science Program, Faculty of Nursing, and Chulalongkorn University about the research objectives, characteristics, procedures, as well as benefits, risks or harm that may occur in this study. I already ask questions regarding the study until I thoroughly understand it.

I am willing to participate in this study. I know that I have a right to withdraw from the study at any time without providing reasons to the researcher. This will cause no negative effect on me or my family. **The researcher will keep all copies of the transcript and coding in a locked cabinet and erased them after the data** is no longer used for the purpose of the study, and will present only the findings of the study and no personal information.

If I have any question regarding the study, I can contact the researcher at 11/1 M. 14 Rimchon Village Tambon Keang Ampuar Muang Maha Sarakham Province, Thailand 44000, home phone 043-970-510, Mobile phone 08-9710-0456.

I am willing to participate in this study under the above conditions.

---------- ---------- ----------
Place / Time ( )
Participant signature

---------- ---------- ----------
Place / Time ( )
Main researcher signature

---------- ---------- ----------
Place / Time
(……) Witness signature

ใบยินยอมของผู้มีส่วนร่วมในการวิจัย
(Informed Consent Form)

ชื่อโครงการ โมเดลเชิงสาเหตุของการเข้ามารับการรักษาช้าของผู้ป่วยโรคกล้ามเนื้อหัวใจตายเฉียบพลัน

เลขที่ผู้มีส่วนร่วมในการวิจัย……..

ข้าพเจ้าได้รับทราบข้อมูลจากผู้วิจัย ชื่อ นายสุรชาติ สิทธิปกรณ์ นิสิตปริญญาเอก หลักสูตรพยาบาลศาสตรดุษฎีบัณฑิต คณะพยาบาลศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย ถึงวัตถุประสงค์ ลักษณะ แนวทางการวิจัย รวมทั้งรับทราบถึงผลดีและความเสี่ยงที่อาจจะเกิดขึ้น โดยข้าพเจ้าได้ซักถาม ทำความเข้าใจเกี่ยวกับการศึกษาดังกล่าว เป็นที่เรียบร้อยแล้ว

ข้าพเจ้ายินดีเข้าร่วมการศึกษาครั้งนี้โดยสมัครใจ และมีสิทธิ์ ที่จะขอออกจากการเข้าร่วมการวิจัยนี้ได้ทุกเวลา โดยไม่จำเป็นต้องแจ้งเหตุผล ซึ่งไม่เกิดผลเสียใดๆต่อข้าพเจ้าและครอบครัว โดย**ผู้วิจัยรับรองว่าจะเก็บข้อมูลที่ได้จากการลงรหัสไว้เป็นความลับ เก็บรักษาไว้ในที่ปลอดภัย** และจะทำลายข้อมูลดังกล่าวเมื่อเสร็จสิ้นการใช้ข้อมูลตาม วัตถุประสงค์ของการวิจัยและจะเปิดเผยเพียงผลการวิจัยโดยไม่มีข้อมูลส่วนบุคคลแต่อย่างใด

หากข้าพเจ้ามีข้อคำถามใดๆที่เกี่ยวข้องในการวิจัยดังกล่าว ข้าพเจ้าสามารถติดต่อสอบถามผู้วิจัยซึ่งอาศัยอยู่ ณ บ้านเลขที่ 11/1 หมู่ 14 หมู่บ้านริมชล ต.เกิ้ง อ.เมือง จ.มหาสารคาม โทรศัพท์ 043-970-510โทรศัพท์เคลื่อนที่ 08-9710-0456 ข้าพเจ้ายินดีเข้าร่วมการศึกษานี้ภายใต้เงื่อนไขที่ได้ระบุไว้แล้วในข้างต้น

.....…… ……

สถานที่ / วันที่ ( )

ลงนามผู้มีส่วนร่วมในการวิจัย

…… .....

สถานที่ / วันที่ ( )

ลงนามผู้วิจัยหลัก

…… .....

สถานที่ / วันที่ ( )

ลงนามพยาน

APPENDIX E

INTERVIEWING FORMS FOR DATA COLLECTION

เอกสารหมายเลข 3 ก

เอกสารชี้แจงผู้เข้าร่วมการวิจัย

(Participant information sheet)

ในเอกสารนี้อาจมีข้อความที่ท่านอ่านแล้วยังไม่เข้าใจ โปรดสอบถามหัวหน้าโครงการวิจัยหรือผู้แทนให้ช่วยอธิบายจนกว่าจะเข้าใจดี ท่านอาจจะขอเอกสารนี้กลับไปอ่านที่บ้านหรือปรึกษาหารือกับญาติพี่น้อง เพื่อนสนิท แพทย์ประจำตัวของท่าน หรือแพทย์ท่านอื่น เพื่อช่วยในการตัดสินใจเข้าร่วมโครงการวิจัย

ชื่อโครงการวิจัย โมเดลเชิงสาเหตุของการเข้ามารับการรักษาช้าของผู้ป่วยโรคกล้ามเนื้อหัวใจตายเฉียบพลัน

ชื่อผู้วิจัย นายสุรชาติ สิทธิปกรณ์ นิสิตคณะพยาบาลศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย

สถานที่วิจัย สถานที่ทำงานและหมายเลขโทรศัพท์ที่ต่อได้ทั้งในและนอกเวลาราชการ

สถานที่ทำงาน คณะพยาบาลศาสตร์ มหาวิทยาลัยมหาสารคาม ต.ขามเรียง อ. กันทรวิชัย จ. มหาสารคาม 44150 โทรศัพท์ที่ทำงาน 04-3754-341

สถานที่อยู่ 11/1 หมู่ 14 หมู่บ้านริมชล ต.เกิ้ง อ.เมือง จ. มหาสารคาม 44000

โทรศัพท์บ้าน 043-970510 **โทรศัพท์เคลื่อนที่ 089-710-0456** E-mail: surachat_sit@hotmail.com

การวิจัยครั้งนี้ได้รับทุนส่งเสริมการทำวิทยานิพนธ์บางส่วน จาก ทุน 90 ปี จุฬาลงกรณ์มหาวิทยาลัย

โครงการวิจัยนี้ทำขึ้นเพื่อ ศึกษาประสบการณ์และการตอบสนองต่ออาการของโรคกล้ามเนื้อหัวใจตายเฉียบพลัน รวมทั้งปัจจัยอื่น ๆ ที่เกี่ยวข้อง ซึ่งมีประโยชน์ที่คาดว่าจะได้รับคือ ข้อมูลพื้นฐานจากท่านในการวางแผนช่วยเหลือผู้ป่วยโรคกล้ามเนื้อหัวใจตายเฉียบพลันต่อไป

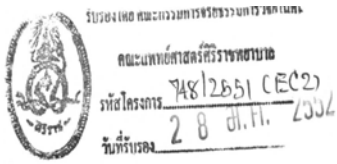
ท่านได้รับเชิญให้เข้าร่วมในการวิจัยนี้เพราะ เป็นโรคกล้ามเนื้อหัวใจตายเฉียบพลัน และการวิจัยนี้ทำขึ้นเพื่อเป็นแนวทางในการวางแผนให้การสนับสนุน ช่วยเหลือและจัดรูปแบบกิจกรรมทางการพยาบาลที่เหมาะสมกับโรคและการรักษาต่อไป

จะมีผู้ร่วมการวิจัยนี้ทั้งสิ้นประมาณ 240 คน ระยะเวลาที่ทำวิจัยทั้งสิ้น 6 เดือน

เมื่อท่านเข้าร่วมการวิจัยแล้ว สิ่งที่ท่านจะต้องปฏิบัติ คือตอบแบบสอบถาม 1 ครั้ง ซึ่งเป็นแบบสอบถามข้อมูลส่วนบุคคล แบบสอบถามการตอบสนองต่อการเจ็บป่วยและแบบสอบถามการเผชิญปัญหาในผู้ป่วยโรคกล้ามเนื้อหัวใจตาย โดยใช้เวลาในการตอบแบบสอบถามประมาณ 15-20 นาที

การศึกษาครั้งนี้เป็นการตอบแบบสอบถาม จึงไม่มีผลข้างเคียงที่จะกระทบด้านร่างกาย แต่อาจมีคำถามบางคำถามที่อาจจะกระทบความรู้สึกของท่านได้ ดังนั้นท่านมีสิทธิที่จะปฏิเสธการตอบแบบสอบถามหรือถอนตัวออกจากการศึกษาครั้งนี้ได้ทุกเวลาที่ท่านต้องการ

ความเสี่ยงที่อาจจะเกิดขึ้นเมื่อเข้าร่วมวิจัย อาจเกิดความอ่อนเพลียจากการตอบแบบสอบถาม ท่านไม่ต้องรีบตอบคำถามทั้งหมด โดยท่านสามารถพักระหว่างตอบแบบสอบถามได้



หากท่านไม่เข้าร่วมในโครงการวิจัยนี้ ท่านก็จะได้รับการตรวจรักษาโรคของท่านตามวิธีการที่เป็นมาตรฐาน

หากท่านมีข้อข้องใจที่จะสอบถามเกี่ยวข้องกับการวิจัย สามารถติดต่อ นายสุรชาติ สิทธิปกรณ์ ที่ 089-710-0456

การเข้าร่วมวิจัยครั้งนี้ไม่มีค่าใช้จ่ายใด ๆ เพิ่มเติม

หากมีข้อมูลเพิ่มเติมทั้งด้านประโยชน์และโทษที่เกี่ยวข้องการวิจัยนี้ ผู้วิจัยจะแจ้งให้ทราบโดยรวดเร็วไม่ปิดบัง

ข้อมูลส่วนตัวของท่านจะถูกเก็บรักษาไว้ ไม่เปิดเผยต่อสาธารณเป็นรายบุคคล ข้อมูลที่ได้จะนำไปวิเคราะห์โดยการลงรหัสและวิเคราะห์ในภาพรวมไม่แยกเฉพาะราย ผลการวิจัยจะนำเสนอในภาพรวมเท่านั้น

ท่านมีสิทธิ์ถอนตัวออกจากโครงการวิจัยเมื่อใดก็ได้ โดยไม่ต้องแจ้งให้ทราบล่วงหน้า และการไม่เข้าร่วมการวิจัยหรือถอนตัวออกจากโครงการวิจัยจะไม่มีผลกระทบต่อการบริการและการรักษาที่สมควรจะได้รับแต่ประการใด

หากท่านได้รับการปฏิบัติไม่ตรงตามที่ได้ระบุไว้ในเอกสารชี้แจงผู้เข้าร่วมการวิจัย ท่านจะสามารถติดต่อกับประธานคณะกรรมการจริยธรรมการวิจัยในคน หรือผู้แทน ทราบได้ที่ สำนักงานคณะกรรมการจริยธรรมการวิจัยในคน ตึกอดุลยเดชวิกรม ชั้น 6 ร.พ.ศิริราช โทร (02) 419-6405-6

ข้าพเจ้าได้อ่านรายละเอียดในเอกสารนี้ครบถ้วนแล้ว

ลงชื่อ...../วันที่.....

(.....)

เอกสารหมายเลข 3

หนังสือแสดงเจตนายินยอมเข้าร่วมการวิจัย

วันที่..... เดือน..... พ.ศ.....

ข้าพเจ้า.....อายุ.....ปี อาศัยอยู่บ้านเลขที่.....

ถนน.....ตำบล.....อำเภอ.....

จังหวัด.....รหัสไปรษณีย์.....โทรศัพท์ .....

ขอแสดงเจตนายินยอมเข้าร่วมโครงการวิจัย เรื่องโมเดลเชิงสาเหตุของการเข้ามารับการรักษาช้าของผู้ป่วยโรคกล้ามเนื้อหัวใจตายเฉียบพลัน โดยได้รับทราบข้อมูลจากผู้วิจัย ชื่อ นายสุรชาติ สิทธิปกรณ์ นิสิตปริญญาเอก หลักสูตรพยาบาลศาสตรดุษฎีบัณฑิต คณะพยาบาลศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย ถึงวัตถุประสงค์ ลักษณะและแนวทางการวิจัย รวมทั้งรับทราบถึงผลดีและความเสี่ยงที่อาจจะเกิดขึ้น โดยข้าพเจ้าได้ซักถาม ทำความเข้าใจเกี่ยวกับการศึกษาดังกล่าว เป็นที่เรียบร้อยแล้ว

ข้าพเจ้ายินดีเข้าร่วมการศึกษาครั้งนี้โดยสมัครใจ และมีสิทธิที่จะขอออกจากการเข้าร่วมการวิจัยนี้ได้ทุกเวลา โดยไม่จำเป็นต้องแจ้งเหตุผล ซึ่งไม่เกิดผลเสียใดๆต่อข้าพเจ้าและครอบครัว โดย**ผู้วิจัยรับรองว่าจะเก็บข้อมูลที่ได้จากการลงรหัสไว้เป็นความลับ เก็บรักษาไว้ในที่ปลอดภัย** และจะทำลายข้อมูลดังกล่าวเมื่อเสร็จสิ้นการใช้ข้อมูลตาม วัตถุประสงค์ของการวิจัย และจะเปิดเผยเพียงผลการวิจัยโดยไม่มีข้อมูลส่วนบุคคลแต่อย่างใด

ข้าพเจ้าจึงสมัครใจเข้าร่วมในโครงการวิจัยนี้ :

หากข้าพเจ้ามีข้อข้องใจเกี่ยวกับขั้นตอนของการวิจัย หรือหากเกิดผลข้างเคียงที่ไม่พึงประสงค์จากการวิจัยขึ้นกับข้าพเจ้า ข้าพเจ้าจะสามารถติดต่อกับ นายสุรชาติ สิทธิปกรณ์ ที่เบอร์ 089-7100456

หากข้าพเจ้า หากข้าพเจ้า ได้รับการปฏิบัติไม่ตรงตามที่ได้ระบุไว้ในเอกสารชี้แจงผู้เข้าร่วมการวิจัย ข้าพเจ้าจะสามารถติดต่อกับประธานคณะกรรมการจริยธรรมการวิจัยในคน หรือผู้แทน ได้ที่ สำนักงานคณะกรรมการจริยธรรมการวิจัยในคน ตึกอดุลยเดชวิกรม ชั้น 6 ร.พ.ศิริราช โทร (02) 419-6405-6

ข้าพเจ้าได้ทราบถึงสิทธิ์ที่ข้าพเจ้าจะได้รับข้อมูลเพิ่มเติมทั้งทางด้านประโยชน์และโทษจากการเข้าร่วมการวิจัย และสามารถถอนตัวหรือถอดเข้าร่วมการวิจัยได้ทุกเมื่อ โดยจะไม่มีผลกระทบต่อการบริการและการรักษาพยาบาลที่ข้าพเจ้าจะได้รับต่อไปในอนาคต และยินยอมให้ผู้วิจัยใช้ข้อมูลส่วนตัวของข้าพเจ้าที่ได้รับจากการวิจัย แต่จะไม่เผยแพร่ต่อสาธารณะเป็นรายบุคคล โดยจะนำเสนอเป็นข้อมูลโดยรวมจากการวิจัยเท่านั้น

ข้าพเจ้าได้เข้าใจข้อความในเอกสารชี้แจงผู้เข้าร่วมการวิจัย และหนังสือแสดงเจตนายินยอมนี้โดยตลอดแล้ว จึงลงลายมือชื่อไว้

ลงชื่อ ..... ผู้เข้าร่วมการวิจัย/ วันที่.....

(.....)

ลงชื่อ .....ผู้ให้ข้อมูลและขอความยินยอม/หัวหน้าโครงการวิจัย/ วันที่.....

(.....)

ในกรณีผู้เข้าร่วมการวิจัยอ่านหนังสือไม่ออก ผู้ที่อ่านข้อความทั้งหมดแทนผู้เข้าร่วมการวิจัยคือ.....

จึงได้ลงลายมือชื่อไว้เป็นหลักฐาน

ลงชื่อ ..... พยาน/ วันที่.....

(.....)

เลขที่ผู้มีส่วนร่วมในการวิจัย.....

แบบสอบถามที่ใช้ในการวิจัย

เรื่อง โมเดลเชิงสาเหตุของการเข้ามารับการรักษาช้าในผู้ป่วยโรคกล้ามเนื้อหัวใจตายเฉียบพลัน

ของ

นายสุรชาติ สิทธิปกรณ์

นิสิตปริญญาดุษฎีบัณฑิต คณะพยาบาลศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย

คำชี้แจง:

แบบสอบถามฉบับนี้จัดทำขึ้นเพื่อใช้ในการเก็บรวบรวมข้อมูลเกี่ยวกับปัจจัยที่มีผลต่อการเข้ามารับการรักษาช้าในผู้ป่วยโรคกล้ามเนื้อหัวใจตายเฉียบพลัน โดยแบ่งเป็น 4 ส่วน ดังนี้

ส่วนที่ 1 แบบสอบถามข้อมูลส่วนบุคคล จำนวน 10 ข้อ

ส่วนที่ 2 แบบสอบถามการสนองตอบต่ออาการเจ็บป่วย จำนวน 17 ข้อ

ส่วนที่ 3 แบบสอบถามการเผชิญกับอาการกล้ามเนื้อหัวใจตายเฉียบพลัน จำนวน 15 ข้อ

ส่วนที่ 4 สำหรับพยาบาลผู้ช่วยวิจัย จำนวน 7 ข้อ

ส่วนที่ 1 แบบสอบถามข้อมูลส่วนบุคคล

คำชี้แจง

โปรดอ่านและเติมข้อมูลลงในช่องว่าง หรือใส่เครื่องหมาย √ ลงใน ☐ ที่ตรงกับตัวท่านมากที่สุด เพียงข้อละ 1 คำตอบ

1. อายุ .....ปี

2. เพศ ☐ชาย ☐ หญิง

3. สถานภาพสมรส ☐ โสด ☐ คู่ ☐ หม้าย
☐ หย่า แยกกันอยู่ ☐ อื่น ๆ.....

4. ศาสนา ☐ พุทธ ☐ อิสลาม
☐ คริสต์ ☐ อื่น ๆ.....

5. ระดับการศึกษา
☐ ไม่ได้ศึกษา ☐ ประถมศึกษา
☐ มัธยมศึกษา ☐ อาชีวศึกษา/ประกาศนียบัตร
☐ ปริญญาตรี ☐ สูงกว่าปริญญาตรี

6. รายได้ต่อเดือน
☐ น้อยกว่า 10,000 บาท ☐ 10,001-20,000 บาท
☐ 20,001 – 30,000 บาท ☐ มากกว่า 30,001 บาท

7. สิทธิ์ในการรักษา
☐ บัตรทอง 30 รักษาทุกโรค ☐ ประกันสังคม/ ประกันชีวิต
☐ เบิกต้นสังกัด ☐ ชำระเอง
☐ อื่น ๆ.....

8. โรคประจำตัวอื่น ๆ

☐ ไม่มี ☐ โรคเบาหวาน

☐ โรคความดันโลหิตสูง

☐ โรคหัวใจและหลอดเลือดอื่น ๆ ระบุ.....

☐ โรคอื่น ๆ.....

9. เคยเข้ารับการรักษาด้วยอาการของโรคกล้ามเนื้อหัวใจตายเฉียบพลันมาก่อน

☐ ไม่เคย ☐ เคย ครั้งที่.....

เมื่อปี.....

10. การเดินทางมาโรงพยาบาลของคุณในการเจ็บป่วยครั้งนี้ เดินทางมาโดย

☐ รถบริการฉุกเฉินทางการแพทย์

☐ บุคคลในครอบครัว หรือ เพื่อน ขับรถส่วนบุคคลมาให้

☐ ขับรถมาเอง

☐ รถโดยสารประจำทาง รถรับจ้าง

☐ อื่น ๆ .....

.....

The Response to Symptom Questionnaire (Thai-Version)

แบบสอบถามการตอบสนองต่อความเจ็บป่วย

เมื่อคุณมีปัญหาเกี่ยวกับโรคหัวใจ คุณอาจมีอาการที่แตกต่างกันได้หลายอย่าง **"อาการ"** ในที่นี้หมายถึง ความรู้สึกใด ๆ ที่ไม่ปกติ หรือแตกต่างไปจากภาวะตามธรรมดาของคุณ (เช่น วิงเวียน, เจ็บหน้าอก, เหนื่อยล้า, อาหารไม่ย่อย, ฯลฯ) กรุณาตอบคำถามด้านล่างนี้ ที่อธิบายได้ดีที่สุดเกี่ยวกับเหตุการณ์หรือการกระทำของคุณ เมื่อคุณเริ่มมีอาการหรือขณะที่คุณมีอาการของการเจ็บป่วยในครั้งนี้

คำชี้แจง:

โปรดกรอกข้อมูลเกี่ยวกับ **เวลา** ลงในช่องว่าง ให้ตรงกับข้อมูลที่ตรงกับข้อมูลของท่านให้**มากที่สุด**

1. เวลา **ครั้งแรก** ที่คุณเริ่มมีอาการแสดงของการเจ็บป่วยครั้งนี้ เมื่อใด?

วันที่..... เวลา ..... น.

2. เวลาที่คุณ **ตัดสินใจแน่นอน** ที่จะไปโรงพยาบาล หรือ เวลาที่คุณตัดสินใจโทรไปขอความช่วยเหลือจากหน่วยบริการฉุกเฉินทางการแพทย์ เมื่อใด ?

วันที่..... เวลา ..... น.

3. คุณมา**ถึงโรงพยาบาล** เมื่อเวลาใด ?

วันที่..... เวลา ..... น.

(สิ่งที่จะช่วยให้คุณจำช่วงเวลาได้แม่นยำมากขึ้น คุณอาจจะมองดูเวลา หรือ จำได้ว่าช่วงเวลานั้นรายการทีวีอะไรกำลังเล่นอยู่ จะช่วยให้จำได้ดีขึ้น)

6

7. คุณคิดว่า อาการที่เกิดขึ้นกับคุณก่อนมาโรงพยาบาลครั้งนี้ เหมือนหรือตรงกับ **อาการหัวใจวายเฉียบพลัน** หรือไม่ *โดยให้คะแนนจากคะแนน 0 ถึง 10 หมายถึง ไม่เหมือน จนถึง เหมือนที่คาดไว้ทั้งหมด*

คะแนน 0 หมายถึง ไม่มีความเหมือนเลย

คะแนน 10 หมายถึง ตรงกับความคาดไว้ทุกประการ

0	1	2	3	4	5	6	7	8	9	10

ไม่เหมือนเลย — ตรงกับที่คาดไว้ทุกประการ

8. เมื่อคุณสังเกตเห็น**อาการแรกเริ่ม**ที่เกิดขึ้นกับคุณ คุณคิดว่าปัญหานี้น่าจะมี **สาเหตุ** เกิดจากอะไรมากที่สุด? (เลือกตอบเพียง 1 ข้อ)

1. หัวใจ
2. กระเพาะอาหาร
3. ปัญหาเกี่ยวกับกระเพาะปัสสาวะ
4. ปวดกล้ามเนื้อ (รวมถึงปวดหลัง, ปวดไหล, และอื่น ๆ)
5. ความเหนื่อยล้า
6. หวัด หรือ อาการที่คล้ายโรคไข้หวัด
7. ปัญหาเกี่ยวกับฟัน
8. ปัญหาด้านการหายใจ หรือ ปอด
9. อื่น ๆ .....

9. เมื่อคุณสังเกตเห็น **อาการแรกเริ่ม** ที่เกิดขึ้น คุณคิดว่าอาการนั้น **รุนแรง** เพียงใด? (เลือกตอบเพียง 1 ข้อ)

1	2	3	4	5
ไม่รุนแรงเลย	เล็กน้อย	ปานกลาง	มาก	รุนแรงมากที่สุด

10. เมื่อ/ขณะที่ เกิด**อาการแรกเริ่ม** คุณรู้สึกเป็นกังวล (ทุกข์ใจหรือไม่สบายใจ) เกี่ยวกับอาการที่เกิดขึ้นในระดับใด (เลือกตอบเพียง 1 ข้อ)

1	2	3	4	5
ไม่มีเลย	เล็กน้อย	ปานกลาง	มาก	กังวลมากที่สุด

11. คุณคิดว่า คุณสามารถที่จะควบคุมอาการที่เกิดขึ้นกับคุณ **ณ เวลานั้น** มีเพียงใด (เลือกตอบ 1 ข้อ)

1	2	3	4	5
ควบคุมไม่ได้เลย	ได้เล็กน้อย	ปานกลาง	ควบคุมได้มาก	ควบคุมได้มากที่สุด

7

12. คุณคิดว่าการรีบ**ไปโรงพยาบาลให้เร็วที่สุด**เมื่อมีอาการผิดปกติเกี่ยวกับหัวใจ มีความสำคัญเพียงใด (เลือกตอบเพียง 1 ข้อ)

1	2	3	4	5
ไม่สำคัญเลย	สำคัญเล็กน้อย	ปานกลาง	สำคัญมาก	สำคัญมากที่สุด

13. อาการที่เกิดขึ้นกับคุณ กระทบต่อการทำกิจวัตรประจำวันของคุณ เพียงใด (เลือกตอบเพียง 1 ข้อ)

1. ไม่กระทบต่อการดำเนินชีวิตประจำวันเลย
2. กระทบบางเวลา บางกิจกรรมในการดำเนินชีวิตประจำ
3. กระทบตลอดเวลา จนไม่สามารถดำเนินชีวิตตามปรกติได้เลย

14. ในการเจ็บป่วยครั้ง**นี้ในตอนแรก**ที่เกิดอาการ คุณมีความรู้สึก**ไม่สุขสบายหรือเจ็บปวด** อยู่ในระดับใด การให้คะแนน 0 ถึง 10 หมายถึง ไม่เจ็บปวดเลย จนถึง เจ็บปวดมากที่สุดเท่าที่เคยรู้สึกมา

0 หมายถึง ไม่มีอาการเจ็บเลย

10 หมายถึง เจ็บปวดมากที่สุดเท่าที่คุณเคยรู้สึกมา

0	1	2	3	4	5	6	7	8	9	10

ไม่มีอาการเจ็บเลย — เจ็บปวดมากที่สุดเท่าที่คุณเคยรู้สึกมา

15. **ก่อน**ที่คุณจะมีอาการกล้ามเนื้อหัวใจตายเฉียบพลันในครั้งนี้, คุณเคยรู้มาก่อนหรือไม่ว่ามี **"ยาละลายลิ่มเลือด"** ซึ่งสามารถยับยั้งอาการกล้ามเนื้อหัวใจตายเฉียบพลันได้ ?

1. เคยรู้มาก่อน เคยได้รับความรู้มาจาก .....
2. ไม่เคยรู้มาก่อนเลย

16. **ก่อนที่คุณจะมีอาการกล้ามเนื้อหัวใจตายเฉียบพลันในครั้งนี้**, คุณเคยรู้มาก่อนหรือไม่ว่ามี **"การรักษาแบบใส่บอลลูน"** บริเวณที่มีการอุดตันที่เป็นสาเหตุของอาการกล้ามเนื้อหัวใจตายเฉียบพลัน?

1. เคยรู้มาก่อน เคยได้รับความรู้มาจาก .....
2. ไม่เคยรู้มาก่อนเลย

Coping with Heart Attack Symptom Scale (Thai-Version)

แบบสอบถามการเผชิญกับอาการกล้ามเนื้อหัวใจตายเฉียบพลัน

ส่วนที่ 3:

คำชี้แจง กรุณาระบุความถี่ที่คุณปฏิบัติ เพื่อตอบสนองต่ออาการกล้ามเนื้อหัวใจตายเฉียบพลันที่เกิดขึ้นกับคุณ คุณกระทำสิ่งใดต่อไปนี้ **มากหรือน้อย** อยู่ในระดับใด

	ระดับของการเผชิญอาการกล้ามเนื้อหัวใจตายเฉียบพลัน				
	ไม่เคยทำเลย	นาน ๆ ทำครั้ง	ทำบ้างไม่ทำบ้าง	ทำบ่อย ๆ	ทำทุกครั้ง
1. ภาวนาหรือสวดมนต์ เพื่อให้อาการที่เกิดขึ้นหายไป					
2. พยายามผ่อนคลาย					
3. พยายามบอกตัวเองว่า ไม่มีอะไรผิดปกติ					
4. บอกคนที่อยู่ใกล้ ๆ คุณ ในบริเวณนั้น					
5. พยายาม ไม่นึกถึงอาการที่เกิดขึ้นกับคุณ					
6. รับประทานยาตามที่แพทย์สั่ง (ยารักษาโรคหัวใจ ยาลดการเจ็บแน่นหน้าอก , แอสไพริน, ยาอื่น ๆ)					
7. รับประทานยาที่หาซื้อได้ทั่วไปและแพทย์ไม่ได้สั่ง (ยาลดกรดในกระเพาะ, พาราเซตามอล, ยาอื่น ๆ)					
8. โทรหาใครสักคนเพื่อบอกสิ่งที่เกิดขึ้น					
9. นอน/ พักผ่อน					
10. รับประทานยาพื้นบ้าน (สมุนไพรต่าง ๆ, ชาร้อน, ตะไคร้หอม, อื่น ๆ)					
11. ลองหาวิธีการแก้ไขแบบอื่น ๆ (เปลี่ยนอิริยาบถ, เดินไปรอบ ๆ)					
12. เบี่ยงเบนความสนใจจากอาการที่เป็นอยู่ (ดูทีวี, อ่านหนังสือ, อื่น ๆ)					
13. ทำกิจวัตรประจำวันตามปกติ					
14. พยายามบอกตัวเองว่าสิ่งที่เกิดขึ้น **ไม่รุนแรง**					
15. พยายามบอกคนอื่น ๆ ว่าสิ่งที่เกิดขึ้นไม่รุนแรง					

10

ส่วนที่ 4 สำหรับพยาบาลผู้ช่วยวิจัย

คำชี้แจง:

โปรดกรอกข้อมูลลงในช่องว่าง ให้ตรงกับข้อมูลของผู้ป่วย โดย **บันทึกจาก เวชระเบียน**

1. การวินิจฉัยโรค (.....) STEMI. (.....) NSTEMI (....) Unstable Angina with ST-T changes
2. การวินิจฉัยโรคกล้ามเนื้อหัวใจตายเฉียบพลัน
   1. ได้รับการวินิจฉัยครั้งแรก ..... ใช่ ..... ไม่ใช่ (ครั้งที่.....)
   2. CPK/Troponin positive ..... ใช่ ..... ไม่ใช่
   3. EKG changes ..... ใช่ ..... ไม่ใช่
   4. อื่น ๆ .....

3. ปัจจัยเสี่ยงที่ทำให้เกิดโรค

   (.....) DM (.....) HT (.....) Family History โรคหัวใจ

   (.....) ไขมันในเลือดสูงกว่าปกติ (.....) สูบบุหรี่เป็นประจำ วันละ .....

4. เวลาที่มาถึงโรงพยาบาล (แผนกอุบติเหตุฉุกเฉิน หรือ แผนกผู้ป่วยนอก) เวลาในเวชระเบียน

   แผนกอุบติเหตุฉุกเฉิน วันที่..... เวลา ..... น. หรือ

   แผนกผู้ป่วยนอก วันที่..... เวลา ..... น.

   รับส่งต่อมาจากโรงพยาบาล..... วันที่..... เวลา.....น.

   การรักษาเบื้องต้นที่ได้รับ.....

5. อาการสำคัญที่มาโรงพยาบาล.....

6. การรักษาที่ได้รับและช่วงเวลาที่ได้รับการรักษา

   ยาละลายลิ่มเลือด ทางหลอดเลือดดำ (Thrombolytic or Primary PCI)

   วันที่..... เวลา ..... น.

   Emergency Catheterization/ or angioplasty

   วันที่..... เวลา ..... น.

   ไม่ได้รับ reperfusion therapy (Thrombolytic or Primary PCI)

   สาเหตุที่ไม่ได้รับเพราะ.....

   ยาที่ได้รับ.....

   วันที่..... เวลา ..... น.

7. ภาวะแทรกซ้อนที่เกิดขึ้น

   (.....) Heart Failure (.....) Arrhythmia (.....) CVA (.....) Bleeding

Demographic Data Sheet

ID Code:…….

1. Age: ……. year

2. Gender: Male …….. Female ……

3. Race : ……

4. Health Insurance (circle all that apply)

a) No insurance

b) 30 bath for total care

c) Private

6. Highest grade achieved in school

a) Less than prathom

b) High school, no diploma

c) High school graduate (includes equivilancy)

d) Some post-secondary education, no degree

e) Associates degree

f) Bachelors degree

g) Graduate or professional degree

7. Did you ever a heart attack before?

Yes …… No……

8. Annual family income Bath (mount)

1. < B 19,999
2. B 20, 000 - B 29,999
3. B 30,000 - B 39,999
4. B 40, 000 - B 49,999
5. > 50,000

9. Medical history of:

CHF	Yes…….	No……
Diabetes	Yes…….	No……
Hypertension	Yes…….	No……
Angina/CAD	Yes…….	No……
CABG	Yes…….	No……
PTCA	Yes…….	No……

10. Initial vital signs recorded by EMS or Emergency Department:

_____ Heart rate

_____ Systolic Blood Pressure

11. Peak cardiac marker value recorded during AMI hospitalization:

Troponin I: _____ ng/mL

Troponin T: _____ ng/mL

12. Initial therapy upon presentation

_____ IV thrombolytic therapy

_____ Emergency catheterization and/or angioplasty

_____ No early reperfusion therapy (thrombolytic or Primary PCI) administered

13. Arrival at Emergency or Urgent Care: Date: _____ Time: _____

Date_____ (month/day/year)
Time_____ (24 hour clock)

RESPONSE TO SYMPTOMS QUESTIONNAIRE

People can experience many different symptoms when they have a problem with their heart. By
"symptoms" we mean any feeling that was unusual or out of the ordinary (for example, dizziness, chest pain, fatigue, indigestion). Please answer the following questions that best describe how you responded to your symptoms.

1. You first noticed your symptoms

   Date_____ Time_____

2. You decided to call for medical help/go to the hospital

   Date_____ Time_____

3. You left your home for the hospital

   Date_____ Time_____

4. When you first noticed your symptoms you were at
   (Circle one answer)

   1. home
   2. work
   3. other _____

5. When you first noticed your symptoms you were
   (*Circle all that apply)*

   1. alone
   2. with your spouse or partner
   3. with a person dependent upon you for care
   4. with another family member
   5. with friends
   6. with co-workers
   7. other_____

6. When you told other people about your symptoms, their FIRST action was (*This question refers to lay people, not health care providers – circle one answer only*)

1. they said or did nothing
2. they told you not to worry
3. they tried to comfort you
4. they suggested you rest or take medicine
5. they suggested you get medical help
6. they called the emergency system to get help for you
7. they took you to the hospital
8. they got upset
9. you never told anyone about your symptoms
10. other_____

7. The FIRST thing that you did when you FIRST noticed your symptoms was (*Circle one answer only*)

1. wished or prayed that they would go away
2. tried to relax
3. pretended nothing was wrong
4. tried not to think about your symptoms
5. took medication (for example, antacid, nitro, acetaminophen)
6. called your doctor
7. tried self-help remedy (changing position, herbs, etc.)
8. told someone who was nearby (friend, co-worker, stranger, etc.)
9. called the emergency system
10. transported yourself or had someone transport you to the hospital
11. drove to the doctor's office or clinic
12. other_____

8. When you FIRST noticed your symptoms you thought the problem was *most likely* due to (*Circle one answer only*)

1. your heart
2. stomach, hiatal hernia, or gallbladder problem
3. muscle pain (includes back pain, shoulder pain, etc.)
4. fatigue
5. flu or flu-like illness
6. dental problem
7. breathing or lung problem
8. other_____

9. When you first experienced your symptoms, how *serious* did you think they were? (*Circle one answer only.*)

1	2	3	4	5
not at all	mildly	moderately	very	extremely

Coping with Heart Attack Symptoms Scale

ID Code: _____

Please indicate the extent to which you did each of the following in response to your symptoms

1. Wished or prayed that they would go away

0	1	2	3	4
not at all	a little	moderately	a lot	a great deal

2. Tried to relax

0	1	2	3	4
not at all	a little	moderately	a lot	a great deal

7. Took non-prescription medication (antacid, aspirin, acetaminophen, etc.)

0	1	2	3	4
not at all	a little	moderately	a lot	a great deal

..

*12. Did something to take my mind off of my symptoms (watched TV, read a book, etc.)

0	1	2	3	4
Not at all	a little	moderately	a lot	A great deal

13. Went about my normal activities

0	1	2	3	4
Not at all	a little	moderately	a lot	A great deal

*14. Tried to convince myself the problem was not serious

0	1	2	3	4
Not at all	a little	moderately	a lot	A great deal

*15. Tried to convince others that the problem was not serious

0	1	2	3	4
Not at all	a little	moderately	a lot	A great deal

APPENDIX F:

PERMISSION DOCUMENT FOR USING THE INSTRUMENTS

Re: the coping with heart attack symptoms quesionnaire

From: **sfox@uwindsor.ca**
Sent: Friday, November 30, 2007 3:55:37 AM
To: surachat_sit@hotmail.com
2 attachments | Download all attachments (101.0 KB)
Coping wi...doc (47.0 KB), CHASS inf...doc (54.0 KB)

Dear Surachat Sittipakorn
Attached is a copy of the Coping with Heart Attack Symptoms Scale
The text in the document below is an excerpt from my dissertation (which you should be able to get online) related to the instrument. If I can be of additional help, feel free to call or write.
Good luck with your studies.
Susan
Susan M. Fox-Wasylyshyn, RN, PhD
Associate Professor
Health Education Centre, Room 322
Faculty of Nursing
University of Windsor
Tele: (519) 253-3000 x 2284
Fax: (519) 973 - 7084
http://www.uwindsor.ca/elmasrifoxresearch

<surachat_sit@hotmail.com>
29/11/2007 07:55 PM

To <sfox@uwindsor.ca>
cc
Subject the coping with heart attack symptoms questionnaire

Dear Dr. Fox-Wasylyshyn
I interested in your tool for measure coping with AMI delay seeking treatment.
Introduce myself, My name Surachat Sittipakorn
PhD. student of Nursing from Chulalongkorn University, Thailand.
Now I stayed in Detroit in Nursing Visitting research scholar, my advisor in WSU Nursing faculty is Prof. Dr.Virginai Hill Rice.
My phenomena of interest is the delay in seeking treatment in Thai AMI patients. I proposed the AMI coping Model follow your and Dr. Roe Elizabeth study.
I have some problems need help from you, first in the coping phase(phase III) I will use the coping to heart attat symptom fro your study (the comparison of Coping response..., 2007 in Journal of Cardiovascular Nursing) but it have only short version. I need to give permission from you to use this tool and after I publish my dissertation in Internation Nursing Journal after I finised PhD. Program.
Second, plase suggest the problems, the interpretation of this tools to me and If you have any invide me for conductting this phenomena under AMICM theory, please tell me.
Thank you very much
Sincerely your

APPENDIX G:

PRELIMINARY ANALYSIS: NORMALITY, LINEARLITY, AND HOMOSCEDASTICITY

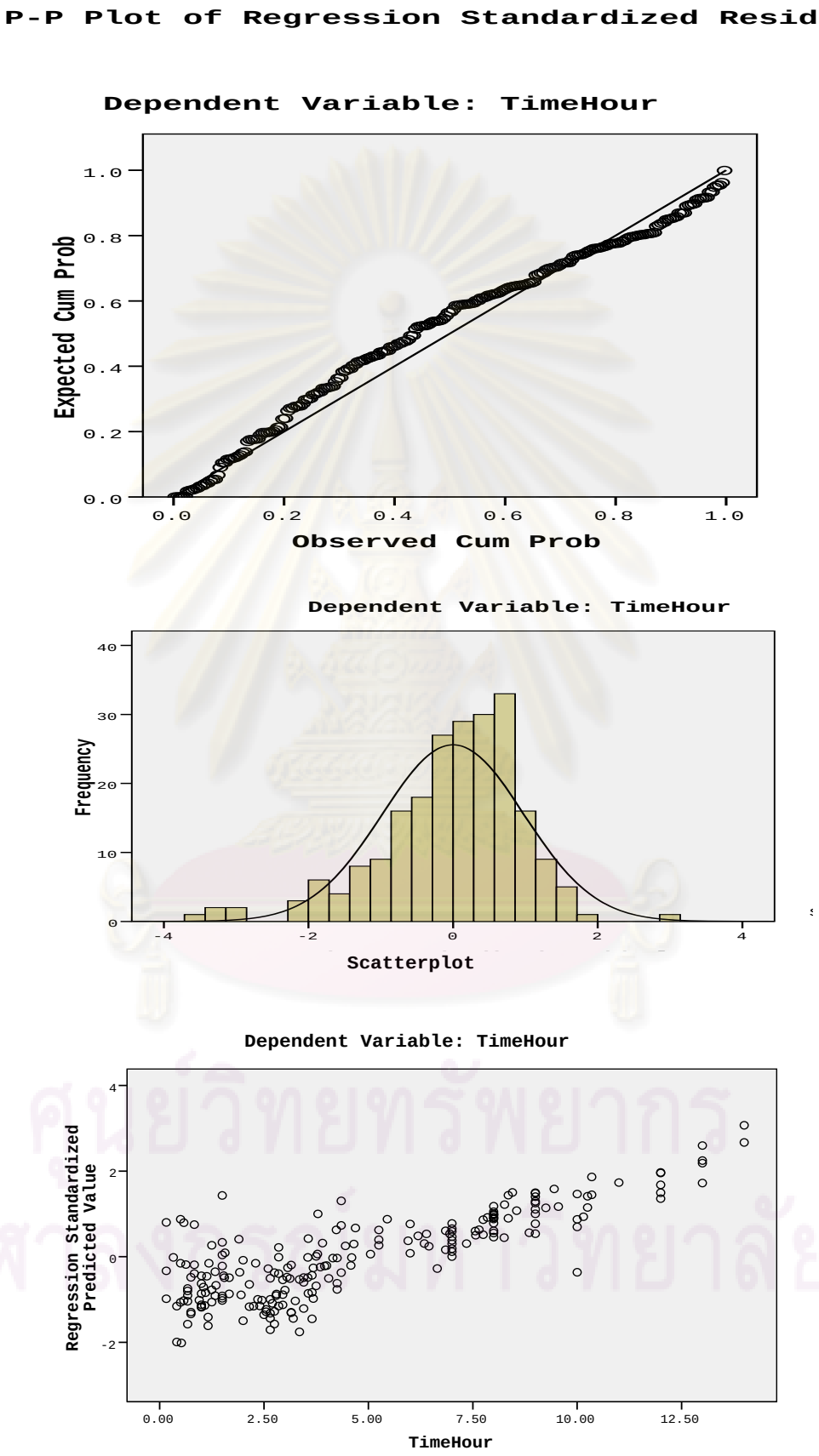
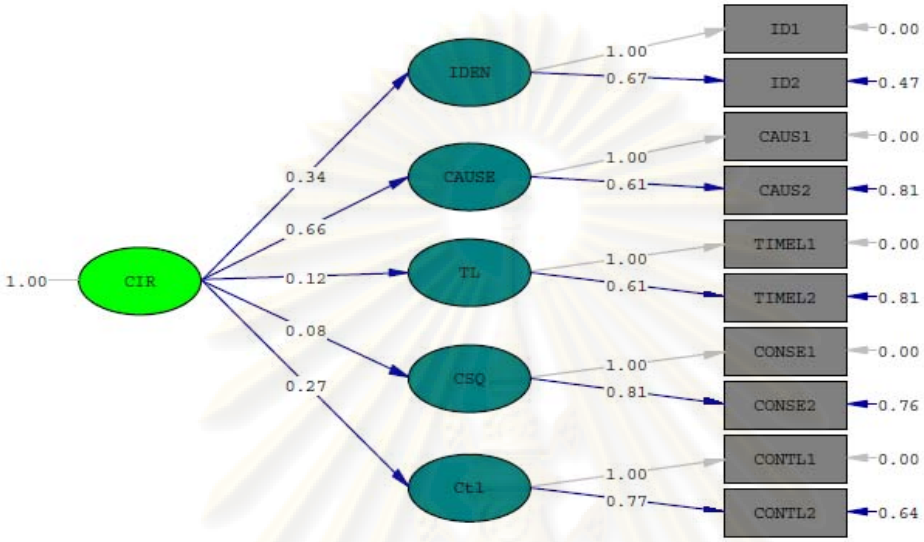


Figure 5 Assumption testing: Normality, Linearity, and homoscedasticity

APPENDIX H:

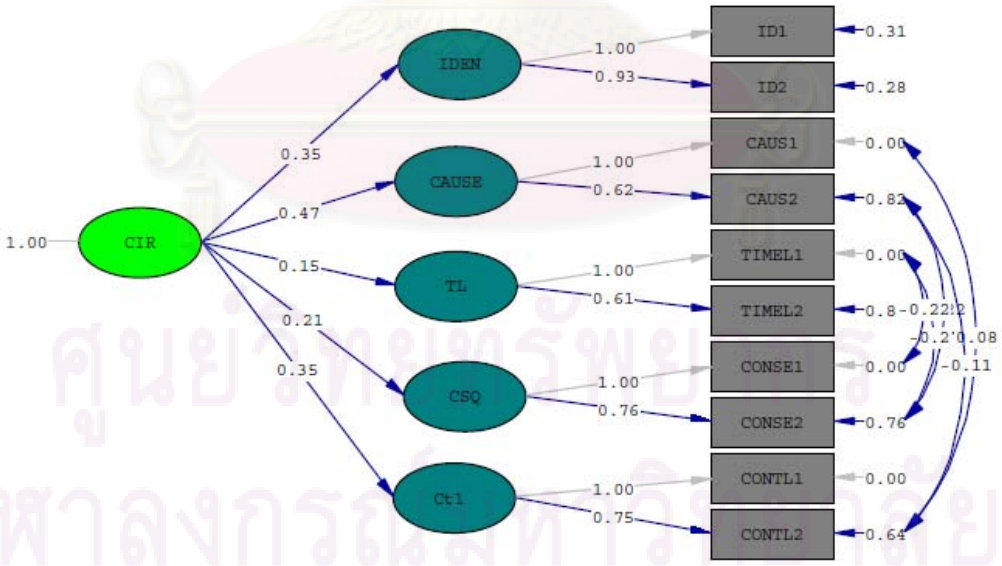
MEASUREMENT MODEL OF THE STUDY VARIABLES

Measurement model testing of Cognitive Illness Representation for delay in seeking treatment model



χ^2 =83.11, *df*= 35, *p*= 0.00, χ^2 /*df*= 2.37, GFI= 0.93, RMSEA= 0.079, CFI= 0.90; NFI= 0.85

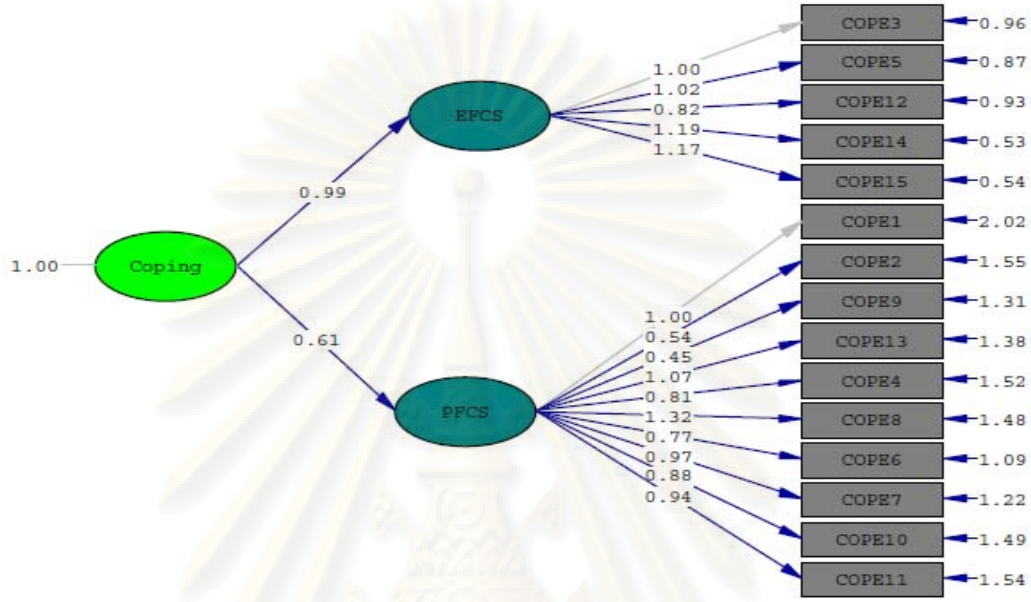
Figure 6 The measurement model of the CIR-DLT: Original model



χ^2 =34.15, *df*=29, *p*= 0.21, χ^2 /*df* = 1.17, GFI= 0.97, RMSEA= 0.028, NFI=0.94, CFI=0.99

Figure 7 The measurement model of the CIR-DLT: Revised model

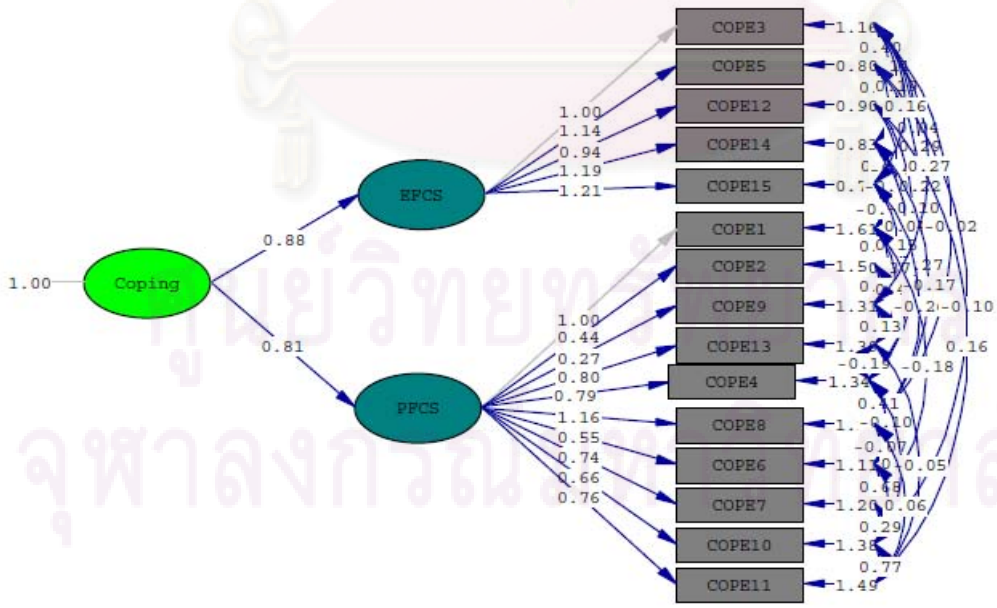
Measurement model testing of Alternative coping Strategies for delay in seeking treatment model



Chi-Square=622.38, df=90, P-value=0.00000, RMSEA=0.193

χ^2 =622.38, *df*= 90, *p*= 0.00, χ^2 /*df*= 6.91, GFI= 0.75, RMSEA= 0.193, CFI= 0.66; NFI= 0.71

Figure 8 The measurement model of the Coping-DLT: original model



χ^2 =65.09, *df*=49, *p*= 0.21, χ^2 /*df* = 1.32, GFI= 0.97, RMSEA= 0.045, NFI=0.96, CFI=0.95

Figure 9 The measurement model of the Coping-DLT: revised model

APPENDIX I:

LISREL PRINTOUT FOR MODEL TESTING OF THE STRUCTURAL EQUATION MODEL

DATE: 4/15/2010

TIME: 11:41

L I S R E L 8.52

BY

Karl G. J”reskog & Dag S”rbom

This program is published exclusively by
Scientific Software International, Inc.
7383 N. Lincoln Avenue, Suite 100
Lincolnwood, IL 60712, U.S.A.
Phone: (800)247-6113, (847)675-0720, Fax: (847)675-2140

Website: www.ssicentral.com

The following lines were read from file H:\22 03 10\AMI Seek delay 2.LPJ:

```
 TI AMI Seek Tx Delay Model
 !DA NI=11 NO=160 NG=1 MA=CM
 SY='H:\22 03 10\160 case 15 04 10.dsf' NG=1

 SE
 1 2 3 4 5 6 7 8 9 10 11 /
 MO NX=1 NY=10 NK=1 NE=5 LY=FU,FI LX=FU,FI BE=FU,FI GA=FU,FI PH=SY,FR
PS=DI,FR TE=DI,FR TD=DI,FR
 LE
 DLT ASS Coping CIR ER
 LK
 SS
 FI TE(1,1) TE(2,2) TE(10,10) TD(1,1)
 FR LY(1,1) LY(2,2) LY(3,3) LY(4,3) LY(5,4) LY(6,4) LY(7,4) LY(8,4) LY(9,4)
 FR LY(10,5) LX(1,1) BE(1,2) BE(2,3) BE(3,4) BE(3,5) GA(1,1) GA(4,1) GA(5,1)
 PD
 OU ME=ML RS EF FS SC IT=1000


 TI AMI Seek Tx Delay Model
```

Number of Input Variables 11
Number of Y - Variables 10
Number of X - Variables 1
Number of ETA - Variables 5
Number of KSI - Variables 1
Number of Observations 160

TI AMI Seek Tx Delay Model

Covariance Matrix

TIMEHR	SERIOUS	PFCST	EFCST	IDENT	TIMELT	
TIMEHR	19.07					
SERIOUS	-2.64	1.40				
PFCST	1.96	-0.39	1.22			
EFCST	2.12	-0.36	0.34	1.06		
IDENT	3.77	-0.39	0.36	0.34	2.23	
TIMELT	2.45	-0.61	0.25	0.31	0.37	1.28
CAUSET	3.24	-0.64	0.07	0.34	0.84	0.63
CONSET	2.43	-0.28	0.37	0.13	0.62	0.36
CTLTO	2.03	-0.38	0.18	0.24	0.33	0.35
ERTOTAL	-0.98	0.22	0.27	0.29	0.00	-0.22
PAIN	-8.41	1.21	-0.72	-0.99	-1.28	-1.25

Covariance Matrix

	CAUSET	CONSET	CTLTO	ERTOTAL	PAIN
CAUSET	1.95				
CONSET	0.43	0.86			
CTLTO	0.56	0.29	0.76		
ERTOTAL	-0.37	-0.06	-0.10	1.33	
PAIN	-1.39	-1.03	-0.76	0.86	7.96

TI AMI Seek Tx Delay Model

Parameter Specifications

LAMBDA-Y

	DLT	ASS	Coping	CIR	ER
TIMEHR	0	0	0	0	0
SERIOUS	0	0	0	0	0
PFCST	0	0	0	0	0
EFCST	0	0	1	0	0
IDENT	0	0	0	0	0
TIMELT	0	0	0	2	0
CAUSET	0	0	0	3	0
CONSET	0	0	0	4	0
CTLTO	0	0	0	5	0
ERTOTAL	0	0	0	0	0

LAMBDA-X

	SS
PAIN	6

BETA

	DLT	ASS	Coping	CIR	ER
DLT	0	7	0	0	0
ASS	0	0	8	0	0
Coping	0	0	0	9	10
CIR	0	0	0	0	0
ER	0	0	0	0	0

GAMMA

	SS
DLT	11
ASS	0
Coping	0
CIR	12
ER	13

PSI

DLT	ASS	Coping	CIR	ER
14	15	16	17	18

THETA-EPS

TIMEHR	SERIOUS	PFCST	EFCST	IDENT	TIMELT
0	0	19	20	21	22

THETA-EPS

CAUSET	CONSET	CTLTO	ERTOTAL
23	24	25	0

TI AMI Seek Tx Delay Model

Number of Iterations = 13

Squared Multiple Correlations for Structural Equations

DLT	ASS	Coping	CIR	ER
0.53	0.30	0.83	0.40	0.07

Squared Multiple Correlations for Reduced Form

DLT	ASS	Coping	CIR	ER
0.44	0.07	0.23	0.40	0.07

Reduced Form

	SS
DLT	-0.66
	(0.07)
	-9.72
ASS	0.26
	(0.06)
	4.41
Coping	-0.48
	(0.11)
	-4.22

CIR	-0.63
	(0.12)
	-5.16
ER	0.26
	(0.08)
	3.37

THETA-EPS

TIMEHR	SERIOUS	PFCST	EFCST	IDENT	TIMELT
- -	- -	0.91	0.70	1.64	0.80
		(0.12)	(0.10)	(0.20)	(0.10)
		7.78	7.11	8.15	7.63

THETA-EPS

CAUSET	CONSET	CTLTO	ERTOTAL
1.18	0.56	0.49	- -
(0.16)	(0.07)	(0.06)	
7.49	7.77	7.77	

Squared Multiple Correlations for Y - Variables

TIMEHR	SERIOUS	PFCST	EFCST	IDENT	TIMELT
1.00	1.00	0.26	0.34	0.26	0.37

Squared Multiple Correlations for Y – Variables

CAUSET	CONSET	CTLTO	ERTOTAL
0.40	0.35	0.35	1.00

Squared Multiple Correlations for X - Variables

PAIN
1.00

Goodness of Fit Statistics

Degrees of Freedom = 41
Minimum Fit Function Chi-Square = 220.96 (P = 0.0)
Normal Theory Weighted Least Squares Chi-Square = 179.32 (P = 0.0)
Estimated Non-centrality Parameter (NCP) = 138.32
90 Percent Confidence Interval for NCP = (100.58 ; 183.62)

Minimum Fit Function Value = 1.39
Population Discrepancy Function Value (F0) = 0.87
90 Percent Confidence Interval for F0 = (0.63 ; 1.15)
Root Mean Square Error of Approximation (RMSEA) = 0.15
90 Percent Confidence Interval for RMSEA = (0.12 ; 0.17)
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.00

Expected Cross-Validation Index (ECVI) = 1.44
90 Percent Confidence Interval for ECVI = (1.20 ; 1.73)
ECVI for Saturated Model = 0.83
ECVI for Independence Model = 6.74
Chi-Square for Independence Model with 55 Degrees of Freedom = 1050.25
Independence AIC = 1072.25
Model AIC = 229.32
Saturated AIC = 132.00
Independence CAIC = 1117.08
Model CAIC = 331.20
Saturated CAIC = 400.96

Normed Fit Index (NFI) = 0.79
Non-Normed Fit Index (NNFI) = 0.76
Parsimony Normed Fit Index (PNFI) = 0.59
Comparative Fit Index (CFI) = 0.82
Incremental Fit Index (IFI) = 0.82
Relative Fit Index (RFI) = 0.72

Critical N (CN) = 47.74
Root Mean Square Residual (RMR) = 0.44
Standardized RMR = 0.11
Goodness of Fit Index (GFI) = 0.83
Adjusted Goodness of Fit Index (AGFI) = 0.73

Parsimony Goodness of Fit Index (PGFI) = 0.52

Summary Statistics for Fitted Residuals

Smallest Fitted Residual = -0.40
Median Fitted Residual = 0.00
Largest Fitted Residual = 2.09

Stemleaf Plot

```
- 4|0
- 2|85930
- 0|866519977665543222111000000000000000
  0|223345811445668
  2|147
  4|
  6|7
  8|8036
 10|
 12|30
 14|
 16|
 18|
 20|9
```

Standardized Residuals

	TIMEHR	SERIOUS	PFCST	EFCST	IDENT	TIMELT
TIMEHR	1.99					
SERIOUS	-1.96	-0.49				
PFCST	3.04	-0.48	-0.49			
EFCST	3.73	0.77	0.02	-0.49		
IDENT	5.59	0.28	0.01	-0.53	- -	
TIMELT	3.47	-3.27	-1.10	-0.75	-2.06	- -
CAUSET	3.98	-1.87	-4.26	-1.52	1.73	0.36
CONSET	5.51	0.26	1.88	-2.97	3.10	-0.39
CTLTO	4.30	-1.73	-1.20	-0.37	-1.07	-0.13
ERTOTAL	-1.47	4.76	1.84	2.30	1.15	-0.93
PAIN	-2.01	2.01	0.20	-1.29	0.42	-0.14

Standardized Residuals

	CAUSET	CONSET	CTLTO	ERTOTAL	PAIN
CAUSET	- -				
CONSET	-1.01	- -			
CTLTO	2.23	0.11	- -		
ERTOTAL	-1.77	0.64	-0.05	- -	
PAIN	1.22	-0.53	1.56	- -	- -

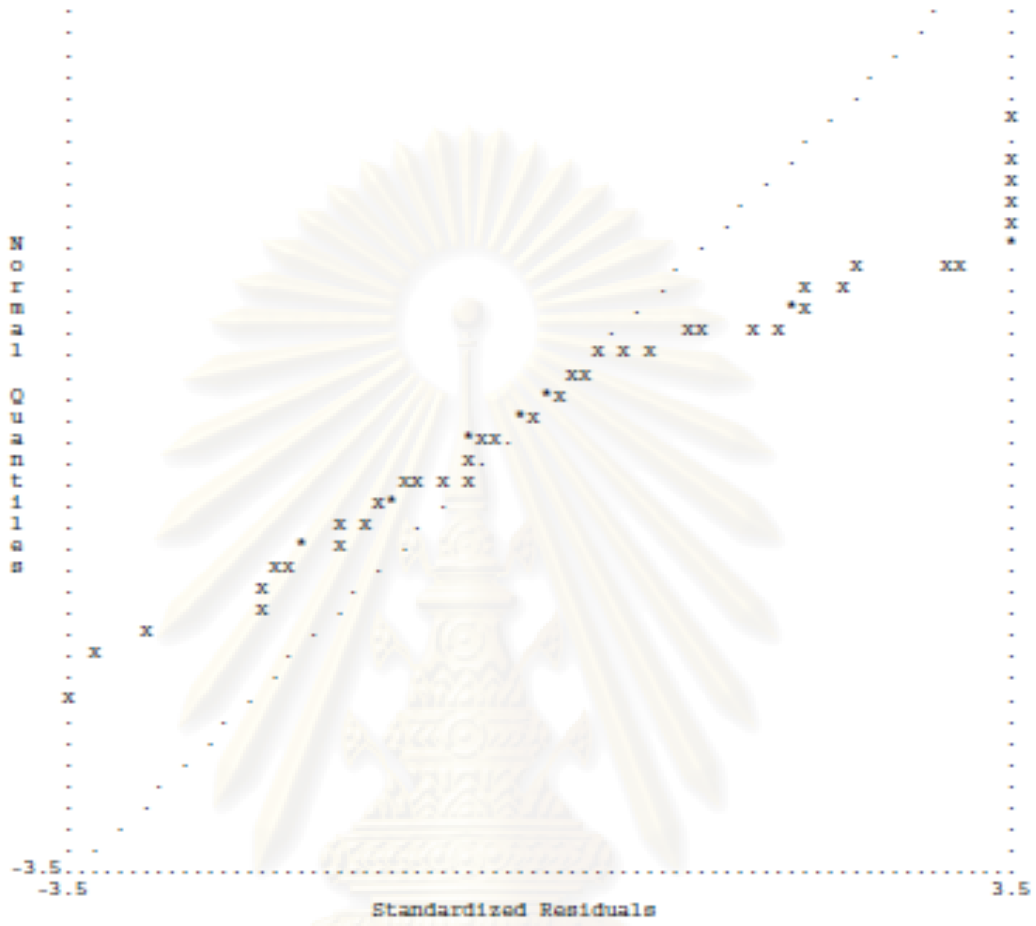
Summary Statistics for Standardized Residuals

```
 Smallest Standardized Residual =   -4.26
   Median Standardized Residual =    0.00
  Largest Standardized Residual =    5.59

 Stemleaf Plot

 - 4|3
 - 3|30
 - 2|100
 - 1|9875532110
 - 0|97555555441110000000000
   0|12334468
   1|126789
   2|0023
   3|0157
   4|038
   5|56
```

TI AMI Seek Tx Delay Model

Qplot of Standardized Residuals

```
  3.5.............................................................
```



TI AMI Seek Tx Delay Model

Total and Indirect Effects

Total Effects of KSI on ETA

	SS
DLT	-0.66
	(0.07)
	-9.72
ASS	0.26
	(0.06)
	4.41
Coping	-0.48
	(0.11)
	-4.22
CIR	-0.63
	(0.12)
	-5.16
ER	0.26
	(0.08)
	3.37

Indirect Effects of KSI on ETA

	SS
DLT	-0.08
	(0.02)
	-3.44
ASS	0.26
	(0.06)
	4.41
Coping	-0.48
	(0.11)
	-4.22
CIR	- -
ER	- -

Total Effects of ETA on ETA

	DLT	ASS	Coping	CIR	ER
DLT	- -	-0.31	0.17	0.15	0.06
		(0.06)	(0.05)	(0.04)	(0.02)
		-5.50	3.54	3.52	3.05
ASS	- -	- -	-0.55	-0.49	-0.19
			(0.12)	(0.11)	(0.05)
			-4.63	-4.58	-3.66
Coping	- -	- -	- -	0.90	0.35
				(0.21)	(0.10)
				4.37	3.55
CIR	- -	- -	- -	- -	- -
ER	- -	- -	- -	- -	- -

Largest Eigenvalue of B*B' (Stability Index) is 0.930

Indirect Effects of ETA on ETA

	DLT	ASS	Coping	CIR	ER
DLT	- -	- -	0.17	0.15	0.06
			(0.05)	(0.04)	(0.02)
			3.54	3.52	3.05
ASS	- -	- -	- -	-0.49	-0.19
				(0.11)	(0.05)
				-4.58	-3.66
Coping	- -	- -	- -	- -	- -
CIR	- -	- -	- -	- -	- -
ER	- -	- -	- -	- -	- -

Total Effects of ETA on Y

	DLT	ASS	Coping	CIR	ER
TIMEHR	4.29	-1.33	0.73	0.66	0.26
		(0.24)	(0.21)	(0.19)	(0.08)
		-5.50	3.54	3.52	3.05
SERIOUS	- -	1.18	-0.65	-0.58	-0.23
			(0.14)	(0.13)	(0.06)
			-4.63	-4.58	-3.66
PFCST	- -	- -	0.56	0.51	0.20
				(0.12)	(0.06)
				4.37	3.55
EFCST	- -	- -	0.60	0.54	0.21
			(0.13)	(0.11)	(0.06)
			4.79	4.77	3.75
IDENT	- -	- -	- -	0.77	- -
TIMELT	- -	- -	- -	0.69	- -
				(0.13)	
				5.22	
CAUSET	- -	- -	- -	0.88	- -
				(0.17)	
				5.31	
CONSET	- -	- -	- -	0.55	- -
				(0.11)	
				5.12	
CTLTO	- -	- -	- -	0.51	- -
				(0.10)	
				5.12	
ERTOTAL	- -	- -	- -	- -	1.16

Indirect Effects of ETA on Y

	DLT	ASS	Coping	CIR	ER
TIMEHR	- -	-1.33	0.73	0.66	0.26
		(0.24)	(0.21)	(0.19)	(0.08)
		-5.50	3.54	3.52	3.05
SERIOUS	- -	- -	-0.65	-0.58	-0.23
			(0.14)	(0.13)	(0.06)
			-4.63	-4.58	-3.66
PFCST	- -	- -	- -	0.51	0.20
				(0.12)	(0.06)

				4.37	3.55
EFCST	- -	- -	- -	0.54	0.21
				(0.11)	(0.06)
				4.77	3.75
IDENT	- -	- -	- -	- -	- -
TIMELT	- -	- -	- -	- -	- -
CAUSET	- -	- -	- -	- -	- -
CONSET	- -	- -	- -	- -	- -
CTLTO	- -	- -	- -	- -	- -
ERTOTAL	- -	- -	- -	- -	- -

Total Effects of KSI on Y

	SS
TIMEHR	-2.85
	(0.29)
	-9.72
SERIOUS	0.31
	(0.07)
	4.41
PFCST	-0.27
	(0.06)
	-4.22
EFCST	-0.29
	(0.06)
	-4.57
IDENT	-0.48
	(0.09)
	-5.16
TIMELT	-0.44
	(0.07)
	-5.90
CAUSET	-0.56
	(0.09)
	-6.03
CONSET	-0.35
	(0.06)
	-5.75
CTLTO	-0.32
	(0.06)
	-5.74
ERTOTAL	0.30
	(0.09)
	3.37

Time used: 0.125 Second

DATE: 4/15/2010

TIME: 11:45

L I S R E L 8.52

BY

Karl G. J”reskog & Dag S”rbom

TI AMI Seek Tx Delay Model

Covariance Matrix

	TIMEHR	SERIOUS	PFCST	EFCST	IDENT	TIMELT
TIMEHR	19.07					
SERIOUS	-2.64	1.40				
PFCST	1.96	-0.39	1.22			
EFCST	2.12	-0.36	0.34	1.06		
IDENT	3.77	-0.39	0.36	0.34	2.23	
TIMELT	2.45	-0.61	0.25	0.31	0.37	1.28
CAUSET	3.24	-0.64	0.07	0.34	0.84	0.63
CONSET	2.43	-0.28	0.37	0.13	0.62	0.36
CTLTO	2.03	-0.38	0.18	0.24	0.33	0.35
ERTOTAL	-0.98	0.22	0.27	0.29	0.00	-0.22
PAIN	-8.41	1.21	-0.72	-0.99	-1.28	-1.25

Covariance Matrix

	CAUSET	CONSET	CTLTO	ERTOTAL	PAIN
CAUSET	1.95				
CONSET	0.43	0.86			
CTLTO	0.56	0.29	0.76		
ERTOTAL	-0.37	-0.06	-0.10	1.33	
PAIN	-1.39	-1.03	-0.76	0.86	7.96

TI AMI Seek Tx Delay Model

Number of Iterations = 8

LISREL Estimates (Maximum Likelihood)

Measurement Equations

```
  TIMEHR = 4.29*DLT,, Rý = 1.00

 SERIOUS = 1.18*ASS,, Rý = 1.00

   PFCST = 0.56*Coping, Errorvar.= 0.95 , Rý = 0.20
                                  (0.12)
                                   8.01

   EFCST = 0.60*Coping, Errorvar.= 0.79 , Rý = 0.26
          (0.15)                  (0.10)
           4.00                    7.81

   IDENT = 0.77*CIR, Errorvar.= 1.73 , Rý = 0.22
                               (0.21)
                                8.26

  TIMELT = 0.76*CIR, Errorvar.= 0.78 , Rý = 0.39
          (0.16)               (0.10)
           4.88                 7.56

  CAUSET = 1.00*CIR, Errorvar.= 1.10 , Rý = 0.43
          (0.20)               (0.15)
           4.98                 7.16

  CONSET = 0.56*CIR, Errorvar.= 0.60  , Rý = 0.31
          (0.11)               (0.076)
           5.28                 7.83

   CTLTO = 0.57*CIR, Errorvar.= 0.48  , Rý = 0.36
          (0.12)               (0.063)
           4.81                 7.69

 ERTOTAL = 1.16*ER,, Rý = 1.00


    PAIN = 2.82*SS,, Rý = 1.00
          (0.16)
           17.83


 Error Covariance for PFCST and TIMEHR = 0.83
                                        (0.21)
                                         4.01

 Error Covariance for EFCST and TIMEHR = 0.83
                                        (0.20)
                                         4.21

 Error Covariance for IDENT and TIMEHR = 2.18
                                        (0.33)
                                         6.65

Error Covariance for TIMELT and TIMEHR = 0.88
                                         (0.21)
                                          4.24

 Error Covariance for CAUSET and TIMEHR = 1.06
                                         (0.26)
                                          4.13
```

```
Error Covariance for CAUSET and PFCST = -0.26
                                       (0.093)
                                        -2.76

Error Covariance for CONSET and TIMEHR = 1.19
                                        (0.20)
                                         5.93

Error Covariance for CONSET and PFCST = 0.13
                                       (0.064)
                                         1.99

Error Covariance for CONSET and EFCST = -0.13
                                       (0.053)
                                        -2.43

Error Covariance for CONSET and IDENT = 0.25
                                       (0.091)
                                         2.74

Error Covariance for CTLTO and TIMEHR = 0.91
                                       (0.17)
                                         5.49

Error Covariance for ERTOTAL and TIMEHR = -0.09
                                          (0.19)
                                          -0.45

Error Covariance for ERTOTAL and PFCST = 0.32
                                       (0.092)
                                         3.43

Error Covariance for ERTOTAL and EFCST = 0.44
                                       (0.095)
                                         4.59

        Structural Equations


DLT      =  - 0.34*ASS - 0.56*SS, Errorvar.= 0.47  , Rý = 0.55
             (0.054)    (0.063)             (0.050)
             -6.31      -8.87                9.37


ASS      =  - 0.74*Coping, Errorvar.= 0.57  , Rý = 0.43
             (0.17)                 (0.092)
             -4.48                   6.18

Coping   = 0.84*CIR - 0.058*ER, Errorvar.= 0.15 , Rý = 0.80
           (0.23)     (0.094)              (0.13)
            3.75      -0.61                1.16


CIR      =  - 0.55*SS, Errorvar.= 0.54 , Rý = 0.36
             (0.12)              (0.20)
             -4.68                2.76

ER       = 0.28*SS, Errorvar.= 0.91 , Rý = 0.081
           (0.073)            (0.10)
            3.90               9.01
```

Reduced Form Equations

DLT = - 0.68*SS, Errorvar.= 0.57, Rý = 0.45
(0.070)
-9.73

ASS = 0.36*SS, Errorvar.= 0.87, Rý = 0.13
(0.064)
5.61

Coping = - 0.48*SS, Errorvar.= 0.54, Rý = 0.30
(0.11)
-4.20

CIR = - 0.55*SS, Errorvar.= 0.54, Rý = 0.36
(0.12)
-4.68

ER = 0.28*SS, Errorvar.= 0.91, Rý = 0.081
(0.073)
3.90

Correlation Matrix of Independent Variables

	SS
	1.00

Covariance Matrix of Latent Variables

	DLT	ASS	Coping	CIR	ER	SS
DLT	1.03					
ASS	-0.54	0.99				
Coping	0.46	-0.57	0.77			
CIR	0.49	-0.53	0.72	0.84		
ER	-0.21	0.14	-0.19	-0.16	0.99	
SS	-0.68	0.36	-0.48	-0.55	0.28	1.00

Goodness of Fit Statistics

Degrees of Freedom = 27
Minimum Fit Function Chi-Square = 32.29 (P = 0.22)
Normal Theory Weighted Least Squares Chi-Square = 31.18 (P = 0.26)
Chi-Square Difference with 1 Degree of Freedom = 6.49 (P = 0.011)
Estimated Non-centrality Parameter (NCP) = 4.18
90 Percent Confidence Interval for NCP = (0.0 ; 22.24)

Minimum Fit Function Value = 0.20
Population Discrepancy Function Value (F0) = 0.026
90 Percent Confidence Interval for F0 = (0.0 ; 0.14)
Root Mean Square Error of Approximation (RMSEA) = 0.031
90 Percent Confidence Interval for RMSEA = (0.0 ; 0.072)

P-Value for Test of Close Fit (RMSEA < 0.05) = 0.73

Expected Cross-Validation Index (ECVI) = 0.69
90 Percent Confidence Interval for ECVI = (0.66 ; 0.80)
ECVI for Saturated Model = 0.83
ECVI for Independence Model = 6.74

Chi-Square for Independence Model with 55 Degrees of Freedom = 1050.25
Independence AIC = 1072.25
Model AIC = 109.18
Saturated AIC = 132.00
Independence CAIC = 1117.08
Model CAIC = 268.11
Saturated CAIC = 400.96

Normed Fit Index (NFI) = 0.97
Non-Normed Fit Index (NNFI) = 0.99
Parsimony Normed Fit Index (PNFI) = 0.48
Comparative Fit Index (CFI) = 0.99
Incremental Fit Index (IFI) = 0.99
Relative Fit Index (RFI) = 0.94

Critical N (CN) = 232.28

Root Mean Square Residual (RMR) = 0.079
Standardized RMR = 0.040
Goodness of Fit Index (GFI) = 0.97
Adjusted Goodness of Fit Index (AGFI) = 0.92
Parsimony Goodness of Fit Index (PGFI) = 0.40

TI AMI Seek Tx Delay Model

Fitted Covariance Matrix

TIMEHR	SERIOUS	PFCST	EFCST	IDENT	TIMELT	
TIMEHR	19.02					
SERIOUS	-2.74	1.39				
PFCST	1.96	-0.38	1.20			
EFCST	2.02	-0.40	0.26	1.07		
IDENT	3.79	-0.48	0.31	0.33	2.23	
TIMELT	2.49	-0.48	0.31	0.33	0.49	1.28
CAUSET	3.16	-0.63	0.15	0.43	0.64	0.64
CONSET	2.37	-0.35	0.36	0.11	0.61	0.36
CTLTO	2.11	-0.36	0.23	0.25	0.37	0.37
ERTOTAL	-1.11	0.19	0.19	0.31	-0.14	-0.14
PAIN	-8.22	1.19	-0.77	-0.81	-1.19	-1.19

Fitted Covariance Matrix

	CAUSET	CONSET	CTLTO	ERTOTAL	PAIN
CAUSET	1.94				
CONSET	0.47	0.86			
CTLTO	0.48	0.27	0.76		
ERTOTAL	-0.18	-0.10	-0.10	1.33	
PAIN	-1.55	-0.87	-0.89	0.93	7.96

Fitted Residuals

TIMEHR	SERIOUS	PFCST	EFCST	IDENT	TIMELT

```
   --------   --------   --------   --------   --------   --------
TIMEHR      0.05
SERIOUS     0.10       0.00
PFCST       0.00      -0.01       0.02
EFCST       0.10       0.05       0.08      -0.01
IDENT      -0.03       0.09       0.05       0.01       0.00
TIMELT     -0.04      -0.12      -0.06      -0.02      -0.13       0.00
CAUSET      0.07      -0.01      -0.08      -0.09       0.19      -0.01
CONSET      0.06       0.07       0.01       0.02       0.01       0.00
CTLTO      -0.08      -0.01      -0.05       0.00      -0.04      -0.02
ERTOTAL     0.13       0.03       0.08      -0.02       0.14      -0.08
 PAIN      -0.19       0.02       0.04      -0.18      -0.09      -0.06


         Fitted Residuals

             CAUSET     CONSET      CTLTO    ERTOTAL       PAIN
            --------   --------   --------   --------   --------
   CAUSET       0.01
   CONSET      -0.04       0.00
    CTLTO       0.08       0.01       0.00
  ERTOTAL      -0.19       0.05       0.00       0.01
     PAIN       0.16      -0.16       0.13      -0.07       0.00

 Summary Statistics for Fitted Residuals

 Smallest Fitted Residual =   -0.19
   Median Fitted Residual =    0.00
  Largest Fitted Residual =    0.19

 Stemleaf Plot

 - 1|9986
 - 1|32
 - 0|998887665
 - 0|4443222111110000000000
   0|11111122234
   0|55556778889
   1|00334
   1|69


         Standardized Residuals

   TIMEHR    SERIOUS      PFCST      EFCST      IDENT     TIMELT
   --------  --------  --------  --------  --------  --------
   TIMEHR       0.37
   SERIOUS      1.25       0.41
PFCST       0.04      -0.28       1.46
EFCST       0.93       1.17       1.32      -0.60
IDENT      -0.27       1.07       0.53       0.14       - -
TIMELT     -0.66      -2.18      -0.90      -0.37      -1.58       - -
CAUSET      0.98      -0.11      -2.53      -1.29       2.09      -0.21
CONSET      1.08       1.43       0.33       0.70       0.71      -0.01
CTLTO      -1.42      -0.31      -1.05      -0.06      -0.67      -0.46
ERTOTAL     0.56       0.63       1.67      -0.51       1.07      -0.86
PAIN       -1.16       0.15       0.27      -1.20      -0.45      -0.47


         Standardized Residuals
```

	CAUSET	CONSET	CTLTO	ERTOTAL	PAIN
CAUSET	1.62				
CONSET	-0.84	-0.19			
CTLTO	1.81	0.42	- -		
ERTOTAL	-1.66	0.59	0.02	0.24	
PAIN	1.11	-1.38	1.26	-0.84	- -

Summary Statistics for Standardized Residuals

Smallest Standardized Residual = -2.53
Median Standardized Residual = 0.00
Largest Standardized Residual = 2.09

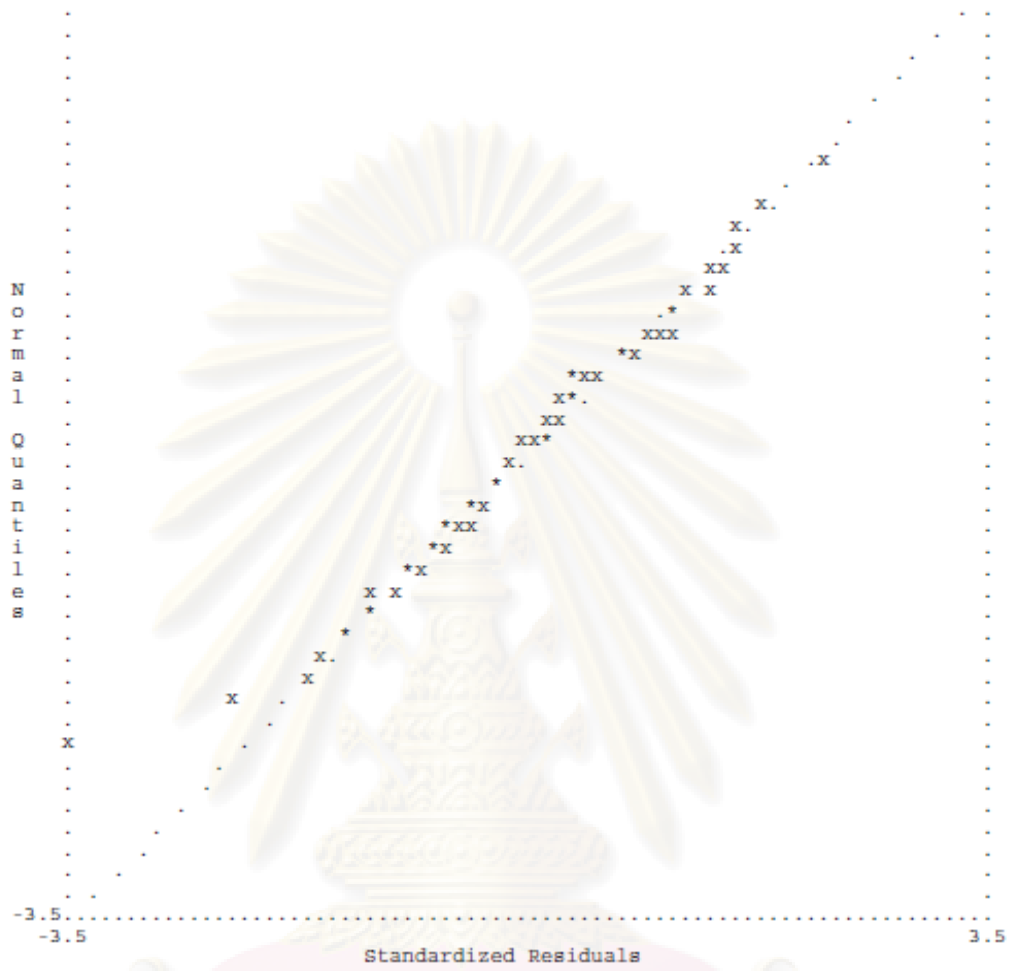
Stemleaf Plot

```
- 2|5
- 2|2
- 1|76
- 1|443220
- 0|9988776555
- 0|4433322110000000
  0|11233444
  0|5666779
  1|0111123334
  1|5678
  2|1
```

TI AMI Seek Tx Delay Model

Q-plot of Standardized Residuals

```
 3.5.............................................................
```



TI AMI Seek Tx Delay Model

Factor Scores Regressions

	ETA					
TIMEHR	SERIOUS	PFCST	EFCST	IDENT	TIMELT	
DLT	0.52	-0.12	-0.25	-0.43	-0.37	-0.10
ASS	0.00	0.84	- -	0.00	0.00	0.00
Coping	-0.22	-0.25	0.28	0.41	0.18	0.13
CIR	-0.25	-0.19	0.22	0.34	0.23	0.20
ER	0.14	-0.10	-0.35	-0.62	-0.06	0.05

ETA

	CAUSET	CONSET	CTLTO	ERTOTAL	PAIN
DLT	-0.11	-0.46	-0.39	0.26	0.03
ASS	0.00	0.00	0.00	0.00	0.00
Coping	0.17	0.28	0.28	-0.26	-0.12
CIR	0.22	0.35	0.38	-0.19	-0.16
ER	-0.02	-0.11	-0.01	1.17	0.00

KSI

	TIMEHR	SERIOUS	PFCST	EFCST	IDENT	TIMELT
SS	0.00	0.00	0.00	0.00	0.00	0.00

KSI

	CAUSET	CONSET	CTLTO	ERTOTAL	PAIN
SS	0.00	0.00	0.00	0.00	0.35

TI AMI Seek Tx Delay Model

Standardized Solution

LAMBDA-Y

	DLT	ASS	Coping	CIR	ER
TIMEHR	1.00	- -	- -	- -	- -
SERIOUS	- -	1.18	- -	- -	- -
PFCST	- -	- -	0.50	- -	- -
EFCST	- -	- -	0.52	- -	- -
IDENT	- -	- -	- -	0.70	- -
TIMELT	- -	- -	- -	0.70	- -
CAUSET	- -	- -	- -	0.92	- -
CONSET	- -	- -	- -	0.52	- -
CTLTO	- -	- -	- -	0.53	- -
ERTOTAL	- -	- -	- -	- -	1.15

LAMBDA-X

	SS
PAIN	2.82

BETA

	DLT	ASS	Coping	CIR	ER
DLT	- -	-0.34	- -	- -	- -
ASS	- -	- -	-0.65	- -	- -
Coping	- -	- -	- -	0.88	-0.07
CIR	- -	- -	- -	- -	- -
ER	- -	- -	- -	- -	- -

GAMMA

	SS
DLT	-0.55
ASS	- -

```
Coping          - -
CIR           -0.60
ER             0.29

        Correlation Matrix of ETA and KSI

 DLT        ASS        Coping     CIR        ER         SS
--------   --------   --------   --------   --------   --------
DLT         1.00
ASS        -0.53       1.00
Coping      0.52      -0.65       1.00
CIR         0.53      -0.58       0.89       1.00
ER          -0.20       0.14      -0.22      -0.17       1.00
SS          -0.67       0.36      -0.55      -0.60       0.29       1.00

        PSI
        Note: This matrix is diagonal.

           DLT        ASS        Coping     CIR        ER
           --------   --------   --------   --------   --------
            0.45       0.57       0.20       0.64       0.92

        Regression Matrix ETA on KSI (Standardized)

           SS
           --------
DLT           -0.67
ASS            0.36
Coping        -0.55
CIR           -0.60
ER             0.29

TI AMI Seek Tx Delay Model

Completely Standardized Solution

        LAMBDA-Y

           DLT        ASS        Coping     CIR        ER
           --------   --------   --------   --------   --------
  TIMEHR       1.00        - -        - -        - -        - -
 SERIOUS        - -       1.00        - -        - -        - -
   PFCST        - -        - -       0.45        - -        - -
   EFCST        - -        - -       0.51        - -        - -
   IDENT        - -        - -        - -       0.47        - -
  TIMELT        - -        - -        - -       0.62        - -
  CAUSET        - -        - -        - -       0.66        - -
  CONSET        - -        - -        - -       0.56        - -
   CTLTO        - -        - -        - -       0.60        - -
 ERTOTAL        - -        - -        - -        - -       1.00


        LAMBDA-X

           SS
           --------
    PAIN       1.00

        BETA

           DLT        ASS        Coping     CIR        ER
           --------   --------   --------   --------   --------
DLT             - -      -0.34        - -        - -        - -
ASS             - -        - -      -0.65        - -        - -
```

Coping	- -	- -	- -	0.88	-0.07
CIR	- -	- -	- -	- -	- -
ER	- -	- -	- -	- -	- -

GAMMA

	SS
DLT	-0.55
ASS	- -
Coping	- -
CIR	-0.60
ER	0.29

Correlation Matrix of ETA and KSI

	DLT	ASS	Coping	CIR	ER	SS
DLT	1.00					
ASS	-0.53	1.00				
Coping	0.52	-0.65	1.00			
CIR	0.53	-0.58	0.89	1.00		
ER	-0.20	0.14	-0.22	-0.17	1.00	
SS	-0.67	0.36	-0.55	-0.60	0.29	1.00

PSI
Note: This matrix is diagonal.

DLT	ASS	Coping	CIR	ER
0.45	0.57	0.20	0.64	0.92

THETA-EPS

	TIMEHR	SERIOUS	PFCST	EFCST	IDENT	TIMELT
TIMEHR	- -					
SERIOUS	- -	- -				
PFCST	0.17	- -	0.80			
EFCST	0.18	- -	- -	0.74		
IDENT	0.34	- -	- -	- -	0.78	
TIMELT	0.18	- -	- -	- -	- -	0.61
CAUSET	0.17	- -	-0.17	- -	- -	- -
CONSET	0.29	- -	0.13	-0.14	0.18	- -
CTLTO	0.24	- -	- -	- -	- -	- -
ERTOTAL	-0.02	- -	0.25	0.37	- -	- -

THETA-EPS

	CAUSET	CONSET	CTLTO	ERTOTAL
CAUSET	0.57			
CONSET	- -	0.69		
CTLTO	- -	- -	0.64	
ERTOTAL	- -	- -	- -	- -

Regression Matrix ETA on KSI (Standardized)

	SS
DLT	-0.67
ASS	0.36
Coping	-0.55

```
CIR           -0.60
ER             0.29

TI AMI Seek Tx Delay Model

Total and Indirect Effects

        Total Effects of KSI on ETA

           SS
           --------
DLT           -0.68
             (0.07)
              -9.73

ASS            0.36
             (0.06)
              5.61

Coping        -0.48
             (0.11)
              -4.20

CIR           -0.55
             (0.12)
              -4.68

ER             0.28
             (0.07)
              3.90


        Indirect Effects of KSI on ETA

           SS
           --------
DLT           -0.12
             (0.03)
              -3.93

ASS            0.36
             (0.06)
              5.61

Coping        -0.48
             (0.11)
              -4.20

CIR           - -

ER             - -


        Total Effects of ETA on ETA

           DLT        ASS        Coping     CIR        ER
           --------   --------   --------   --------   --------
DLT             - -      -0.34       0.25       0.21      -0.01
                        (0.05)     (0.07)     (0.06)     (0.02)
                         -6.31       3.49       3.65      -0.62

ASS             - -        - -      -0.74      -0.62       0.04
                                   (0.17)     (0.14)     (0.07)
                                    -4.48      -4.63       0.62
```

Coping	- -	- -	- -	0.84	-0.06
				(0.23)	(0.09)
				3.75	-0.61
CIR	- -	- -	- -	- -	- -
ER	- -	- -	- -	- -	- -

Largest Eigenvalue of B*B' (Stability Index) is 0.715

Indirect Effects of ETA on ETA

	DLT	ASS	Coping	CIR	ER
DLT	- -	- -	0.25	0.21	-0.01
			(0.07)	(0.06)	(0.02)
			3.49	3.65	-0.62
ASS	- -	- -	- -	-0.62	0.04
				(0.14)	(0.07)
				-4.63	0.62
Coping	- -	- -	- -	- -	- -
CIR	- -	- -	- -	- -	- -
ER	- -	- -	- -	- -	- -

Total Effects of ETA on Y

	DLT	ASS	Coping	CIR	ER
TIMEHR	1.00	-1.47	1.09	0.92	-0.06
		(0.23)	(0.31)	(0.25)	(0.10)
		-6.31	3.49	3.65	-0.62
SERIOUS	- -	1.18	-0.88	-0.74	0.05
			(0.20)	(0.16)	(0.08)
			-4.48	-4.63	0.62
PFCST	- -	- -	0.56	0.48	-0.03
				(0.13)	(0.05)
				3.75	-0.61
EFCST	- -	- -	0.60	0.50	-0.03
			(0.15)	(0.12)	(0.06)
			4.00	4.12	-0.62
IDENT	- -	- -	- -	0.77	- -
TIMELT	- -	- -	- -	0.76	- -
				(0.16)	

				4.88	
CAUSET	- -	- -	- -	1.00	- -
				(0.20)	
				4.98	
CONSET	- -	- -	- -	0.56	- -
				(0.11)	
				5.28	
CTLTO	- -	- -	- -	0.57	- -
				(0.12)	
				4.81	
ERTOTAL	- -	- -	- -	- -	1.16

Indirect Effects of ETA on Y

	DLT	ASS	Coping	CIR	ER
TIMEHR	- -	-1.47	1.09	0.92	-0.06
		(0.23)	(0.31)	(0.25)	(0.10)
		-6.31	3.49	3.65	-0.62
SERIOUS	- -	- -	-0.88	-0.74	0.05
			(0.20)	(0.16)	(0.08)
			-4.48	-4.63	0.62
PFCST	- -	- -	- -	0.48	-0.03
				(0.13)	(0.05)
				3.75	-0.61
EFCST	- -	- -	- -	0.50	-0.03
				(0.12)	(0.06)
				4.12	-0.62
IDENT	- -	- -	- -	- -	- -
TIMELT	- -	- -	- -	- -	- -
CAUSET	- -	- -	- -	- -	- -
CONSET	- -	- -	- -	- -	- -
CTLTO	- -	- -	- -	- -	- -
ERTOTAL	- -	- -	- -	- -	- -

Total Effects of KSI on Y

	SS
TIMEHR	-2.91
	(0.30)
	-9.73
SERIOUS	0.42
	(0.08)
	5.61
PFCST	-0.27
	(0.06)

	-4.20
EFCST	-0.29
	(0.06)
	-4.75
IDENT	-0.42
	(0.09)
	-4.68
TIMELT	-0.42
	(0.07)
	-5.73
CAUSET	-0.55
	(0.09)
	-5.94
CONSET	-0.31
	(0.06)
	-5.26
CTLTO	-0.32
	(0.06)
	-5.62
ERTOTAL	0.33
	(0.08)
	3.90

TI AMI Seek Tx Delay Model

Standardized Total and Indirect Effects

Standardized Total Effects of KSI on ETA

	SS
DLT	-0.67
ASS	0.36
Coping	-0.55
CIR	-0.60
ER	0.29

Standardized Indirect Effects of KSI on ETA

	SS
DLT	-0.12
ASS	0.36
Coping	-0.55
CIR	- -
ER	- -

Standardized Total Effects of ETA on ETA

	DLT	ASS	Coping	CIR	ER
DLT	- -	-0.34	0.22	0.19	-0.01
ASS	- -	- -	-0.65	-0.58	0.04
Coping	- -	- -	- -	0.88	-0.07
CIR	- -	- -	- -	- -	- -

ER	- -	- -	- -	- -	- -

Standardized Indirect Effects of ETA on ETA

	DLT	ASS	Coping	CIR	ER
DLT	- -	- -	0.22	0.19	-0.01
ASS	- -	- -	- -	-0.58	0.04
Coping	- -	- -	- -	- -	- -
CIR	- -	- -	- -	- -	- -
ER	- -	- -	- -	- -	- -

Standardized Total Effects of ETA on Y

	DLT	ASS	Coping	CIR	ER
TIMEHR	1.00	-1.47	0.96	0.85	-0.06
SERIOUS	- -	1.18	-0.77	-0.68	0.05
PFCST	- -	- -	0.50	0.44	-0.03
EFCST	- -	- -	0.52	0.46	-0.03
IDENT	- -	- -	- -	0.70	- -
TIMELT	- -	- -	- -	0.70	- -
CAUSET	- -	- -	- -	0.92	- -
CONSET	- -	- -	- -	0.52	- -
CTLTO	- -	- -	- -	0.53	- -
ERTOTAL	- -	- -	- -	- -	1.15

Completely Standardized Total Effects of ETA on Y

	DLT	ASS	Coping	CIR	ER
TIMEHR	1.00	-0.34	0.22	0.19	-0.01
SERIOUS	- -	1.00	-0.65	-0.58	0.04
PFCST	- -	- -	0.45	0.40	-0.03
EFCST	- -	- -	0.51	0.45	-0.03
IDENT	- -	- -	- -	0.47	- -
TIMELT	- -	- -	- -	0.62	- -
CAUSET	- -	- -	- -	0.66	- -
CONSET	- -	- -	- -	0.56	- -
CTLTO	- -	- -	- -	0.60	- -
ERTOTAL	- -	- -	- -	- -	1.00

Standardized Indirect Effects of ETA on Y

	DLT	ASS	Coping	CIR	ER
TIMEHR	- -	-1.47	0.96	0.85	-0.06
SERIOUS	- -	- -	-0.77	-0.68	0.05
PFCST	- -	- -	- -	0.44	-0.03
EFCST	- -	- -	- -	0.46	-0.03
IDENT	- -	- -	- -	- -	- -
TIMELT	- -	- -	- -	- -	- -
CAUSET	- -	- -	- -	- -	- -
CONSET	- -	- -	- -	- -	- -
CTLTO	- -	- -	- -	- -	- -
ERTOTAL	- -	- -	- -	- -	- -

Completely Standardized Indirect Effects of ETA on Y

	DLT	ASS	Coping	CIR	ER
TIMEHR	- -	-0.34	0.22	0.19	-0.01
SERIOUS	- -	- -	-0.65	-0.58	0.04

PFCST	- -	- -	- -	0.40	-0.03
EFCST	- -	- -	- -	0.45	-0.03
IDENT	- -	- -	- -	- -	- -
TIMELT	- -	- -	- -	- -	- -
CAUSET	- -	- -	- -	- -	- -
CONSET	- -	- -	- -	- -	- -
CTLTO	- -	- -	- -	- -	- -
ERTOTAL	- -	- -	- -	- -	- -

Standardized Total Effects of KSI on Y

	SS
TIMEHR	-1.00
SERIOUS	0.42
PFCST	-0.27
EFCST	-0.29
IDENT	-0.42
TIMELT	-0.42
CAUSET	-0.55
CONSET	-0.31
CTLTO	-0.32
ERTOTAL	0.33

Completely Standardized Total Effects of KSI on Y

	SS
TIMEHR	-0.67
SERIOUS	0.36
PFCST	-0.25
EFCST	-0.28
IDENT	-0.28
TIMELT	-0.37
CAUSET	-0.39
CONSET	-0.33
CTLTO	-0.36
ERTOTAL	0.29

Time used: 0.063 Seconds

APPENDIX J

TRANING MATERIAL FOR RSEARC ASSISTANCES

Training Materials for Research Assistants

คำอธิบายสำหรับผู้เก็บรวบรวมข้อมูล

1. การคัดเลือกเข้ากลุ่มตัวอย่าง

กลุ่มตัวอย่างจะต้องเป็นผู้ป่วยโรคกล้ามเนื้อหัวใจตายเฉียบพลัน ที่ได้รับไว้รักษาในหอผู้ป่วยอายุรกรรมชายหรือหญิง, หอผู้ป่วยวิกฤตอายุรกรรมหรือหอผู้ป่วยวิกฤตโรคหัวใจ ที่มีลักษณะดังนี้

1) ได้รับการวินิจฉัยจากแพทย์ว่ามีภาวะกล้ามเนื้อหัวใจตายเฉียบพลัน Acute Myocardial Infarction ที่รับไว้รักษาในโรงพยาบาล
2) ไม่มีอาการเจ็บปวดจากภาวะของโรคกล้ามเนื้อหัวใจตายเฉียบพลัน
3) มีอาการสัญญาณชีพคงที่ (Vital Sign Stable)
4) อายุตั้งแต่ 20 ปีขึ้นไป
5) สามารถสื่อสารด้วยภาษาไทยได้
6) ยินดีให้ความร่วมมือในการศึกษาวิจัยครั้งนี้

และจะ **ยกเว้น** ผู้ป่วยกล้ามเนื้อหัวใจตายเฉียบพลัน ที่มีลักษณะดังต่อไปนี้

1) มีอาการหอบเหนื่อย หายใจลำบาก อ่อนเพลียมาก เจ็บหน้าอกและระดับสัญญาณชีพไม่คงที่ มากกว่า 72 ชั่วโมงนับตั้งแต่เข้ารับการรักษา
2) ได้รับการวินิจฉัยว่าเป็นกล้ามเนื้อหัวใจตาย จากสาเหตุอื่น ซึ่งไม่ใช่อาการเจ็บป่วยในปัจจุบัน ในการเจ็บป่วยครั้งนี้ หรือ ผู้ที่ได้รับการผ่าตัดหัวใจเพื่อการรักษา
3) เคยเจ็บป่วยทางจิต หรือ สติสัมปชัญญะไม่สมประกอบ หรือ การรับรู้ผิดปกติ

2. คำอธิบายเกี่ยวกับการดำเนินการวิจัยเรื่องนี้ในด้าน วัตถุประสงค์ วิธีการ ประโยชน์ของการทำวิจัยสำหรับผู้ป่วย (กลุ่มตัวอย่าง) อยู่ด้านท้ายของแบบสอบถาม

3. กรุณาอธิบายให้กลุ่มตัวอย่าง เข้าใจสิทธิ์ในการเข้าร่วมวิจัยครั้งนี้ รวมถึงประโยชน์ และเน้นย้ำ ว่าสามารถถอนตัวออกเมื่อใดก็ได้โดยไม่มีผลกระทบต่อการรักษาใด ๆ ทั้งสิ้น และให้ผู้ป่วยลงนามในใบยินยอมเป็นผู้มีส่วนร่วมในการวิจัยที่อยู่ด้านหน้าของชุดแบบสอบถามทุกราย

4. คำอธิบายเพิ่มเติมในแบบสอบถาม (เพื่อให้เห็นได้อย่างชัดเจน) คือ คำถามที่ผู้ป่วยถามบ่อย ๆ เพราะอาจไม่เข้าใจ กรุณาอธิบายเพิ่มเติมครับ ถ้ามีข้อสงสัย

5. ขอความกรุณาให้ผู้ป่วยตอบแบบสอบถามให้ครบทุกข้อ

6. ของที่ระลึกแจกให้ผู้ป่วยเป็นพวงกุญแจที่ระลึก สัญลักษณ์จุฬาลงกรณ์มหาวิทยาลัย คนละ 1 ชิ้น

7. หากมีปัญหาหรือข้อสงสัย กรุณาโทร **089-7100456** นายสุรชาติ สิทธิปกรณ์ ได้ตลอดครับ

Recollection Technique for Completing the Time Intervals Questionnaire

เป็นเรื่องที่สำคัญที่กลุ่มตัวอย่างจะสามารถระลึกถึงเวลาที่แน่นอนเกี่ยวกับเหตุการณ์ที่เกิดขึ้นขณะเริ่มมีอาการของโรคกล้ามเนื้อหัวใจตายเฉียบพลัน เพื่อให้ได้ข้อมูลที่ตรงกับความเป็นจริงมากที่สุด ให้ใช้ “benchmark technique” ต่อไปนี้ เพื่อช่วยยืนยัน เวลา ที่แน่นอน ในแต่ละช่วงที่ต้องการถาม

หลังจากที่กลุ่มตัวอย่าง ระบุวัน เวลาที่แน่นอนของเหตุการณ์ที่เกิดขึ้นแล้ว เพื่อเป็นการยืนยัน ให้ถามต่อด้วยคำถามว่า “บอกฉันได้ไหมว่า คุณรู้ได้ยังไงว่าขณะที่เกิดอาการเริ่มแรกนั้น เป็นเวลา 11.15 น.”

กระตุ้นให้ผู้ป่วยระบุเหตุการณ์รอบข้างในขณะนั้น ทำอะไรอยู่ เช่น กำลังทำอาการกลางวัน หรือ กำลังดูข่าวภาคเที่ยงอยู่ เป็นต้น

ถ้าหากว่ากลุ่มตัวอย่าง ไม่แน่ใจเกี่ยวกับเวลาที่แน่นอน ใช้ benchmark technique เพื่อช่วยให้ตอบได้ ดังนี้ เช่น เมื่อผู้ป่วยพูดว่า ฉันไม่แน่ใจ ว่าจะจำได้ ให้ตอบว่า “คุณสามารถจำได้แน่ ลองนึกดี ๆ บอกฉันว่า ตอนนั้น คุณกำลังทำอะไรอยู่ ดูทีวี- รายการอะไร ตอนช่วงไหน ต้นรายการ กลาง หรือ จบแล้ว” เป็นต้น

ถ้าหากว่ากลุ่มตัวอย่าง ไม่สามารถบอกได้เลยว่า เกิดอาการเริ่มแรก ช่วงเวลาใด กระตุ้นให้ผู้ป่วย ช่วย ประมาณการช่วงเวลา เช่น ระว่างบ่าย 2 โมง ถึง บ่าย 3 โมง เป็นต้น

Script: Introduction to Interview/Questionnaires

ผู้วิจัยขอขอบพระคุณสำหรับความร่วมมือที่ได้รับจากการตอบแบบสอบถามในครั้งนี้ ก่อนที่เราจะเริ่มทำแบบสอบถาม หากมีคำถามใดที่ฟังแล้วไม่เข้าใจ กรุณาบอกผู้วิจัย เพื่อการอธิบายเพิ่มเติม ถ้าหากท่านเหนื่อยล้า ให้หยุดทำแบบสอบถามเพื่อพัก หรือ นัดครั้งต่อไปเพื่อทำอีกครั้งในช่วงเวลาที่ท่านพร้อมจะตอบ

การศึกษาครั้งนี้เป็น 1 ในการศึกษาจากทั้งหมด 5 โรงพยาบาล เพื่อความแน่ใจว่าท่านได้รับข้อมูลที่ตรงกันทั้งหมด ผู้วิจัยจะช่วยอ่านคำถามที่ท่านไม่เข้าใจให้ฟัง พร้อมคำอธิบายโดยละเอียดเพื่อความเข้าใจ พร้อมทั้ง รูปแบบในการตอบที่เข้าใจ ให้ตรงกับความรู้สึกของท่านอย่างเป็นจริงมากที่สุด

การตอบคำถามในครั้งนี้ ไม่มีข้อใดถูกหรือผิด ถ้ามีส่วนใดที่ท่านไม่เข้าใจ กรุณาสอบถามทันที โดยไม่ต้องเกรงใจ หากท่านไม่เข้าใจ ตัวเลือกคำตอบ หรือ ท่านไม่เข้าใจคำถาม กรุณาถามผู้วิจัยได้ตลอดโดยไม่ต้องเกรงใจ ไม่มีเวลาจำกัดในการตอบแบบสอบถามครั้งนี้ ท่านสามารถใช้เวลาได้มากจนคุณพอใจและเข้าใจในสิ่งที่ต้องการตอบ ถ้าหากท่านต้องการอ่านไปพร้อม ๆ กับผู้วิจัย หรือ คุณมีข้อคำถามใด ๆ ก่อนเริ่มการสัมภาษณ์ หรือไม่? คุณพร้อมที่จะเริ่มหรือยังครับ?

กรุณาอ่านคำชี้แจงด้านบนสุดของแต่ละชุดแบบสอบถามให้เข้าใจ ก่อนตอบแบบสอบถามครับ การตอบแบบสอบถามจะมีด้วยกัน 4 ส่วน ประกอบด้วย

ส่วนที่ 1 แบบสอบถามข้อมูลส่วนบุคคล สามารถดูจาก OPD Card ประกอบได้ครับ

ส่วนที่ 2 แบบสอบถามการตอบสนองต่ออาการของโรคกล้ามเนื้อหัวใจตายเฉียบพลัน (The Response to Symptoms Questionnaire- Thai-version)

1-3. จะถามถึงช่วงเวลา ที่เกิดเหตุการณ์ ในการเจ็บป่วย ในครั้งนี้ โดย ประกอบด้วย เวลาที่เริ่มต้นมีอาการ, เวลาที่แน่นอนที่ท่านตัดสินใจมาโรงพยาบาล, และเวลาที่มาถึงโรงพยาบาล (ใช้ Benchmark technique เพื่อให้ได้ช่วงเวลาที่ตรงกับความเป็นจริงที่สุด)

4-5. คำถามจะเกี่ยวข้องกับ บุคคลที่อยู่ด้วยใกล้ที่สุดและสถานที่

6. บุคคล ที่ท่านขอความช่วยเหลือตอบสนองท่านอย่างไร

7. เปรียบความเหมือนหรือความแตกต่างจากการคาดหวังเกี่ยวกับอาการของโรคหัวใจตามความคาดหวังของกลุ่มตัวอย่าง

8. สาเหตุของการเกิดอาการครั้งนี้ น่าจะมาจากอวัยวะใด

9. ระดับความรุนแรงที่เกิดขึ้น มากน้อยเพียงใด

10. ความวิตกกังวล

11. ความสามารถในการควบคุมอาการ ณ ขณะนั้น

12. ความรู้เกี่ยวกับเข้ารับการรักษาให้เร็ว เมือเกิดอาการกล้ามเนื้อหัวใจตายเฉียบพลัน

13. ผลกระทบต่อการดำเนินชีวิตประจำวัน

14. ระดับความเจ็บปวด หรือ แน่นอึดอัด

15-16. ความรู้เกี่ยวกับยาละลายลิ่มเลือดกับการเปิดเส้นเลือด เพื่อถ่างขยายหลอดเลือด

ส่วนที่ 3 จะเกี่ยวข้องกับการเผชิญปัญหาของผู้ป่วยเมื่อเกิดอาการของโรคกล้ามเนื้อหัวใจตายเฉียบพลัน **(Coping with Heart Attack Symptoms Scale Thai-version)**

ข้อคำถามจะเกี่ยวข้องกับการจัดการกับอาการที่เกิดขึ้นก่อนมาโรงพยาบาลของผู้ป่วย โดยอ่านคำชี้แจงให้ผู้ป่วยฟัง และรอฟังคำตอบ จากนั้นดูจากรายการที่ให้เลือก (15 coping strategies) ถ้าผู้ป่วยบอก 1 หรือ 2 อย่าง ค่อย rate เป็น แบบ Rating Scale

ส่วนที่ 4 สำหรับพยาบาลผู้ช่วยวิจัย

บันทึกจากเวชระเบียนเกี่ยวกับ การรักษาที่ได้รับ ภาวะเสี่ยง ภาวะแทรกซ้อนที่เกิดขึ้น

การสิ้นสุดการสัมภาษณ์

ขอบขอบคุณในความร่วมมือในการตอบแบบสอบถามครั้งนี้ ท่านมีข้อคำถามอื่น ๆ เพิ่มเติมหรือไม่ ก่อนที่ผู้วิจัยจะไป? ถ้าหากมีข้อสงสัยใด ๆ หลังจากนี้ กรุณาโทรศัพท์ สอบถาม จากเบอร์ ที่ให้ไว้ ขอบคุณครับ

นายสุรชาติ สิทธิปกรณ์

นิสิตพยาบาลศาสตร์ดุษฎีบัณฑิต

BIOGRAPHY

My name is Surachat Sittipakorn. I was born on March 12, 1976 at Ubon Ratchathani province, north east part of Thailand. I finished my bachelor degrees of nursing science from the Faculty of Nursing, Khon Kaen University in 1998. During 1998-2003, I had worked as the register nurse, clinical nursing experience in emergency, acute and chronic care (Emergency Department, Khon Kaen Hospital)

During 2001-2003, I had studied in master degree of nursing science (Adult Nursing) at the faculty of Nursing, Khon Kaen University again and I graduated in 2003.

During 2004 – 2005, I worked as the nurse instructor in the faculty of nursing, Mahasarakham University. I was responsible for teaching gerontological nursing and adult nursing in the faculty.

In mid of year 2005, I started to perform PhD study in nursing science at faculty of nursing, Chulalongkorn University. In 2009, I graduated and obtained the doctor of philosophy in nursing science. After graduation, I have returned to teach again in the faculty of nursing, Mahasarakham University.