Coping and Related Factors Among Patients With Myocardial Infarction

in Bangladesh

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ABSTRACT

Patients diagnosed with myocardial infarction (MI) face major physical and emotional challenges with this life-threatening illness. Effective coping strategies used by the patients with MI are significant for nurses in helping them to achieve a desirable outcome. This descriptive study aimed to determine the coping strategies frequently used and related factors among patients with MI. Eighty eight patients diagnosed with MI in a medical college hospital in Bangladesh were recruited to participate in this study. A demographic and health related questionnaire was used to obtain the subjects' demographic and health related characteristics. The Brief COPE was used to assess coping strategies. Test-retest reliability was examined resulting in a percentage of agreement for the subscales ranged from 40% to 70%.

Findings showed that more than half of the patients with MI in this study were men (69.3%) with a mean age of 51.25 years old ($SD = 13.46$). The majority of the subjects had been diagnosed with MI for less than one year (65.9%). The three most frequently used coping strategies were self-blame ($M = 5.19$, $SD = 1.63$), denial ($M = 5.16$, $SD = 1.49$), and venting ($M = 5.13$, $SD = 1.36$). Whereas, the three least frequently used coping strategies were self-distraction ($M = 4.58$, $SD = $

1.65), positive reframing (M = 4.66, SD = 1.52), and behavioral disengagement (M = 4.76, SD = 1.31).

Regarding factors related to the coping strategies used by patients with MI, the results showed that there was no significant difference according to age, education level, residential area, and duration of illness of the patients with MI. However, there was significant difference between gender and coping strategy subscale of venting.

Patients with MI in Bangladesh reported using various coping strategies simultaneously. Ineffective coping strategies were used more often than effective coping strategies. Further study is needed to examine significant factors related to effective coping strategies in order to achieve desirable health outcomes.

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CHAPTER 1

INTRODUCTION

Background and Significance of the Problem

Myocardial infarction (MI) is one of the cardiovascular life-threatening diseases and major contributor to mortality in the world. An estimated 17.3 million people died from cardiovascular diseases in 2008, representing 30% of all global deaths. By the year 2030, approximately 23.3 million people will die from cardiovascular diseases, including MI (WHO, 2011). People are disproportionally affected. Three-fourths of global deaths and 82% of the total disability adjusted life years of patients with MI, occurred in low and middle-income countries in men and women (Gaziano, Bitton, Anand, Abrahams-Gessel, & Murphy, 2010).

MI is one of the top ten incidents leading morbidity and mortality in Bangladesh. According to the Directorate General of Health Services (DGHS, 2011), six out of 18 Medical Collage Hospitals reported that among 264,375 hospitalized cases, 2.66% of them died from myocardial infarction. In addition, a report revealed that about 80% of cardiovascular disease deaths occurred in developing countries like Bangladesh (Bangladesh Bureau of Statistics [BBS] as cited in Muhit et al., 2012).

MI occurs when there is no supply of blood due to an occlusion or necrosis of a coronary artery or myocardial cells. Myocardial infarction is sometimes called a heart attack or plague of the heart. It is a part of the disorders called acute coronary syndromes and coronary thrombosis (Morton, Fontaine, Hudak, & Gallo, 2005). There are many risk factors that contribute to the development of MI. Some

factors are modifiable including high blood cholesterol, hypertension, physical inactivity, obesity, being overweight, taking birth control pills, excessive drinking of alcohol and diabetes mellitus. Some factors are non-modifiable such as heredity, sex hormones, and race (Urden, Stracy, & Lough, 2010).

The diagnosis of MI is a stressful situation that impacts on patients' physical, psychological, and social functioning. Therefore, patients with MI need to be able to cope with their illness. Effective coping can help reduce stress and enhance behavior to achieve a positive health outcome. Effective coping motivates oneself to meet social and environmental demands to maintain stable physical and psychological states. Effective coping strategies also help individuals to deal with stressors before they can threaten and result in negative self-evaluation (Miller, 2000). Coping helps improve patients' physical, psychological, social, spiritual, and emotional well-being (Taylor & Brown, 1994).

According to Lazarus and Folkman (1984), there are two types of coping strategies: problem-focused coping strategies and emotion-focused coping strategies. Regarding problem-focused coping strategies, a person tries to change his/her situation by acting on defining the problem, generating alternative solutions, weighing alternatives with regard to costs and benefits, choosing among them and acting. In the case of the patients with MI, they recognize when problems arise (e.g., chest pain) and become stressors. They, then try to find ways to reduce this pain and stress. Using problem-focused coping, patients may take pain killers or tell their family to take them to the hospital. In doing so, patients have to think through whether it is sufficient to just take pain killers at home or treat the event as an urgent matter and see a doctor. Simply speaking, problem-focused coping strategies are

considered to be strategies similar to problem-solving. For emotion-focused coping strategies, a person tries to regulate his or her emotions when there has been an appraisal that nothing can be done to modify a harmful, threatening, and challenging conditions. Most of the emotion-focused coping strategies require cognitive processes directed at lessening emotional distress, such as avoidance, minimization, distancing, selective attention etc. For example, if patients with MI recognize that they may have a serious heart disease, they may convince themselves that there is no problem and avoid going to the hospital because they may fear the doctor's may give them a "diagnosis" and they may become a "patient" and need further treatment. Eventually, they spend a lot of money on medical bills. With regard to the latter, they may prefer "not to know" what is going on.

How persons cope with this stressful situation is worth investigating. A recent study was conducted in Pakistan by Kasi et al. (2012). This study surveyed 162 patients with anxiety and depression in general population to determine how they coped by using the 28-item Brief COPE inventory. The researchers found that among those who were anxious and depressed, the most commonly used coping strategy was "religion," followed by "acceptance," "use of instrumental support," and "active coping." The finding of this study is generally limited because no specific group of patients can be identified. Chiou, Potempa, and Buschmann (1997) found positive relationships among anxiety, depression and coping strategies in hospitalized patients post MI. The researchers also found a significantly and moderately positive relationship between anxiety and the use of the optimistic coping. Patients may appraise the stress from cardiac condition differently and use different coping strategies. These are effective and ineffective coping strategies.

There was one study conducted in Bangladesh. Asgar (2010) found that most patients with MI experienced moderate level of stress. He also reported that patients with MI often used supportant coping. The occasional used coping was emotive and palliative coping. The sometimes used coping was confrontive coping, evasive coping, optimistic coping, fatalistic coping, and self-reliant coping. This study reported coping strategies used by patients with MI. However, the factors related to coping strategies were not examined.

Another study conducted by Panthee (2011) in Nepal. The result showed that problem-focused coping strategies were used more often than emotion-focused coping strategies. In addition, the most commonly used problem-focused coping were acceptance, trying to maintain control over the situation, and trying to find purpose or meaning in the situation. The most often used emotion-focused coping strategies were telling own self not to worry about the problems, hope, and pray/trust to God.

From previous studies, researchers have sought to examine coping strategies used by patients with MI. Most studies were conducted in other countries. Cultural and social aspects may contribute to different results. Only one study conducted in Bangladesh was reported. However, the study examined only coping strategies. Factors related to coping strategies were not examined. This current study aims to identify coping strategies frequently used by patients with MI and related factors among post MI hospitalized patients in Bangladesh. Knowledge gained from this study will help nursing staff to develop appropriate intervention to promote effective coping, and benefit nursing practice, nursing education, and nursing research in future.

Objectives

The objectives of this study were:

1. To identify the coping strategies frequently used by patients with MI in Bangladesh

2. To examine factors related to coping strategies among patients with MI in Bangladesh

Research Questions

The research questions of this study were:

1. What coping strategies are frequently used by patients with MI in Bangladesh?

2. What factors are related to coping strategies among patients with MI in Bangladesh?

Conceptual Framework

The conceptual framework of this study was guided by Lazarus and Folkman's stress and coping theory (Figure 1). In 1966, Lazarus (as cited in Lazarus & Folkman, 1984) developed three-basic types of outcome approaches to stress that involved a cognitive process of appraisal, coping and outcome.

According to Lazarus and Folkman (1984), cognitive appraisal consists of three kinds, namely, primary appraisal, secondary appraisal, and reappraisal. Primary appraisal refers to a person's evaluation about a situation relating to his or her

well-being. When a person faces the situation, he or she will perceive whether that situation is irrelevant to his or her well-being, offers a positive outcome (positive-being), or is stressful. Stressful situations can be perceived as harmful, threatening, and challenging. Harmful situation means that damage has already happened. Threatening situation means there is a potential harm for a person. Challenging situation means the situation offers a person potential to grow. If a person evaluates a situation as threatening, he or she will appraise what might or can be done. This is called secondary appraisal. This appraisal involves evaluation of the effectiveness and consequences of coping options. A person's appraisal may change based on new information from the environment or another person. This is called reappraisal. In this study, the researcher conceptualized a patients being diagnosed with MI as a stressful event. He/she needs to cope with the stressful event and regulates the problem by the use of different coping strategies.

According to Lazarus and Folkman (1984), coping is defined as a cognitive and behavioral effort to manage specific external and/or internal individual demands that are appraised as taxing or exceeding the resources of the person. To cope with stressful situations an individual needs to understand the situation (cognitive effort) and adjust his or her behavior (behavioral efforts). Moreover, coping contributes to managing or altering the problem with suffering (problem-focused coping), and regulating the emotional response to the problem (emotion-focused coping). Problem-focused and emotion-focused coping influence each other through a stressful environment. Patients with MI may experience many kinds of physical, psychosocial and environmental problems such as limited activity, fear of death, tension, feelings of uncertainty or worry about financial problems. In addition,

coping strategies, such as seeking help, learning new skills, and venting anger are the cognitive and behavioral efforts a person uses in response to a stressor. Therefore, coping strategies refer to specific thoughts, feelings, and activities which a person reports that he/she needs to do.

        Some personal factors and health-related factors may help explain the level of coping strategies among patients with MI. These include age, gender, residential area, educational level, and the duration of illness. These factors were explored in this study, and were examined their relationship with coping strategies.

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│ Demographic and Health Related Factors   │
│                                          │         ┌──────────────────┐
│         -Age                             │         │                  │
│                                          │         │                  │
│         -Gender                          │         │ Coping Strategies│
│                                          │─────────│                  │
│         -Residential area                │         │                  │
│                                          │         └──────────────────┘
│         -Educational level               │
│                                          │
│         -Duration of illness             │
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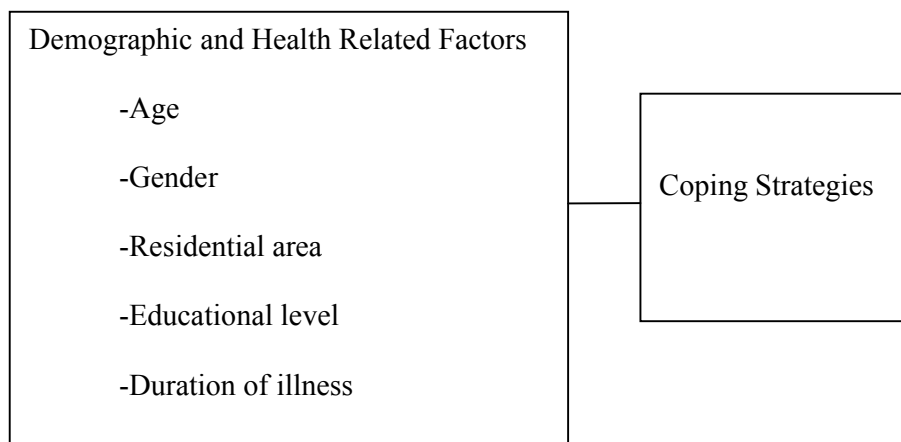
Figure 1. Conceptual framework of the study

Definition of Terms

        Coping refers to cognitive and/or behavioral actions that a patient with MI uses to deal with the stressful situation after the diagnosis of MI. The Brief COPE scale (Carver, 1997) was used to assess coping strategies. It contains 28 items, categorized into14 subscales with two items per subscale of different coping

strategies. Each item is rated by a four-point Likert scale, ranging from 1 (I haven't been doing this at all) to 4 (I have been doing this a lot). These 14 subscales consisted of self-blame, denial, venting, acceptance, religion, humor, planning, using emotional support, using instrumental support, substance use, active coping, behavioral disengagement, positive reframing, and self-distraction. Higher scores indicated that patients with MI used more often coping strategies.

Factors related to coping strategies refer to demographic factors and health related factors. Demographic factors included age, gender, residential area, educational level, and health related factor included MI. These factors were measured by the Demographic Data Assessment and Health Related Questionnaire (DDA & HRQ) which was developed by the researcher.

Scope of the Study

This study was conducted in Shaheed Ziaur Rahman Medical College Hospital, Bogra, Bangladesh. The subjects in the study were patients admitted in coronary care unit, medical wards and those who had follow-up visits at the outpatient department after their initial diagnosis of MI. The data collections were performed during January to March, 2013.

Significance of the Study

The study provides knowledge and adds to the body of knowledge in the area of coping strategies among patients with MI as follows:

1. Knowledge of coping strategies used by patients with MI in Bangladesh will help the nurses to provide effective nursing intervention.

2. Provide useful information to guide future studies on nursing intervention to enhance the appropriate use of coping strategies in patients with MI in Bangladesh.

3. Provide baseline data enhancing the stage of research related to the factors and coping strategies being used by patients with MI.

CHAPTER 2

LITERATURE REVIEW

This chapter presents a literature review for this study. It covers the following contents:

1. Myocardial Infarction (MI)

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Myocardial Infarction (MI)

Overview of MI

Myocardial infarction (MI) is the term used to describe irreversible myocardial cells necrosis or death, caused by complete cessation or interruption of blood supply to the myocardium. A myocardial infarction (MI) is usually the result of thrombus formation in the coronary artery lumen resulting in an acute reduction of blood supply and the heart muscle becoming suddenly blocked to a portion of the myocardium. This region becomes ischemic and eventually necrotic. It is commonly known as a heart attack, and is secondary to prolonged ischemia. MI includes two subtypes of coronary syndrome, that is non-ST-segment elevation myocardial infarction (NSTEMI/ non-STEMI) and ST-segment elevation myocardial infarction (STEMI). Myocardial cells always require a supply of sufficient blood, nutrients and oxygen in order to control the energy and contraction of the myocardium. Prolonged ischemia is caused by an imbalance between oxygen supply and oxygen demand which causes irreversible cell damage and muscle death (Campbell-Scherer & Green, 2009).

The most common cause of a reduced supply of oxygen is from the atherosclerotic narrowing of the coronary arteries. Cardiovascular risk factors play a role in endothelial damage resulting in endothelium dysfunction. The non-functioning of the endothelium contributes to the activation of the inflammatory response and the formation of atherosclerotic plaques. When the plaques rupture, a thrombus is formed at the site that can occlude blood flow, thus resulting in an MI (Morton et al., 2005). Moreover, the normal myocardial muscle contracts with systole and relaxes with diastole. When motion is not possible because of infarction, diastolic and systolic

pumping are altered. As a result, cardiac output is compromised and the larger the area of infarction, the greater the impact on ventricular function. The smooth muscles of the arterioles relax and there is decreased resistance of the blood flow to the arteriolar bed (Burke, Mohn-Brown, LeMone, & Eby, 2007).

There are many risk factors, such as age, gender, occupation, hypertension, hypercholesterolemia, hyper-triglyceridemia, being overweight, diabetes, physical inactivity, smoking, and physiological functions that contribute to the development of MI. Rahsid, Islam, and Islam (2005) reported that MI is more affected by high systolic blood pressure than diastolic blood pressure. It may be due to the injury of the endothelium by systolic blood pressure and enhanced atherosclerosis and risk for MI. These risk factors contribute to the development of MI.

When MI occurs, the most important manifestation is chest pain. The pain begins in the center of the chest and radiates to the arms, neck, and jaw. Patients with MI may be diagnosed by a clinical history of ischemic type of chest pains. In addition, changes in serial ECG tracings, and abnormal serum cardiac biomarkers, such as creatinine kinase-MB fraction and troponin are also helpful to the diagnosis of MI (Das et al., 2011).

Other signs and symptoms are also beneficial to the diagnosis. The patient may present with a shortness of breath, either at rest or on exertion or when lying flat. They may also have hypoventilation, nausea, vomiting and anxiety. The patient may start to perspire, and have cool, pale, and moist skin. The patient's heart and respiration rate may be more rapid than normal (Urden et al., 2010).

Pharmacological therapy is an essential prophylaxis for the management of patients with MI. The patient' clinical history and hemodynamic status may guide the treatment regimen. Usually, patients receive oxygen therapy to maintain their oxygen saturation above 95%. Early management of MI involves pain relief through Morphine, and reperfusion therapy with Nitroglycerin, ASA (anti-platelet therapy), and Streptokinase. The occluded infarct-related artery should be operated on as soon as possible by primary PCI (Percutaneous Coronary Intervention) with a stent or balloon (Campbell-Scherer & Green, 2009). Beta blocker therapy is provided to reduce morbidity and mortality in the patients with MI. The beta blockers work by reducing the oxygen demand by decreasing the heart rate and contractility and also increase coronary artery filling by prolonging diastole. Calcium antagonists decrease myocardial oxygen demand by decreasing after load. Angiotensin-converting enzyme (ACE) inhibitors help prevent ventricular remodeling and preserve ejection fraction (Morton et al., 2005; Urden et al., 2010).

Situation of MI in Bangladesh

Accurate data about the incidence and prevalence of myocardial infarction in Bangladesh is lacking. The incidence of ischemic heart disease (IHD), which includes angina pectoris, unstable angina, and myocardial infarction was approximately 3 persons per thousand (Haque, 1997). Haque noted that a study in 1985 revealed that the incidence of IHD was approximately 14 persons per thousand. The prevalence of IHD in the urban population was reported to be as high as about 100 per one thousand (Haque). Myocardial infarction is the leading cause of death in Bangladesh, mostly in the 4th decade of a human being's existence. The National

Heart Foundation Hospital and Research Institute (2012) recently reported on cardiovascular diseases in Bangladesh. Hypertension in the adult population is about 20-25%, and IHD is about 10% per one thousand adults. All patients with acute myocardial infarction should be hospitalized preferably in a coronary care unit (CCU). Immediate management includes bed rest, an initial evaluation, oxygen inhalation, intravenous access and the administration of aspirin or analgesics (pain relieving drugs like morphine). Further management includes regular follow ups, early mobilization, risk factor modification, and the use of drugs like beta-blockers, to be continued until patient was discharged (Muhit et al., 2012).

Shaheed Ziaur Rahman Medical College Hospital (SZMCH) is the biggest hospital in the northern part of Bangladesh. The cardiac specialist provides care in the outpatients department (OPD) two days per week. However, there is no cardiac rehabilitation center or appropriate treatments for patients with MI. Patients with MI who encounter any problems meet with a cardiologist at CCU. Patients with MI do not want to receive treatment from a general physician at the OPD or emergency department. Moreover, the SZMCH most of the patients come from villages, Upazila, and district levels. Their living areas are far from the hospital. Some patients follow up at the emergency department (ED) during the evening and at night time when the SZMCH outpatient department is closed. Patients can attend the ED for treatment of their health problems, but there is no cardiologist on duty at the ED. Usually, general physicians admit the patient to the Coronary Care Unit (CCU) for better managements or treatments. In addition, most of the Patients with MI want to be admitted to the CCU as to receive appropriate treatment from a cardiologist. There

is only one cardiologist per day on call to take care patients who are admitted in CCU and medical ward.

Impacts of MI

The diagnosis of MI is a painful and stressful situation for the patients and it may have an effect on their physical, psychological, social and spiritual well-being. MI has enormous impacts on patients' health, not only their immediate health but also late consequences.

Physiological impact of MI. Chest pain and discomfort, nausea and vomiting, dyspnea are major symptoms of having acute MI. Rapid pulse rate, increased blood pressure, dyspnea, increased respiration, dilated pupils, dry mouth, and peripheral vasoconstriction may occur and these are autonomic responses to stress in the patient with MI (Morton et al., 2005). Fatigue and sleep disturbances may happen in patients with MI and these affect the patient's functional status. After the MI, numerous complications may arise such as, ventricular tachycardia, ventricular fibrillation, atrial tachycardia, atrial fibrillation, bradycardia, second-degree heart block, third- degree heart block, myocardial ischemia, congestive heart failure, cardiac arrest, reinfarction, and cardiac death (Cherrington, Moser, Lennie, & Kennedy, 2004). Patients with MI, later, usually develop congestive heart failure and are manifested with alterations in the left ventricular function resulting in impaired functional capacity.

According to functional capacity and therapeutic classifications, the American Heart Association (1994) classified heart disease in four categories. These are class I: no evidence of cardiovascular disease (patients with cardiac disease but

without resulting limitations in normal physical activity. Ordinary physical activity does not appear to have symptoms of fatigue, palpitation, dyspnea, or angina). Class II: evidence of minimal cardiovascular disease (patient with cardiac disease resulting in slight limitations of physical activity). They are comfortable at rest. When performing ordinary physical activity, patients feel fatigue, palpitation, dyspnea, or anginal pain. Class III: evidence of moderately severe cardiovascular disease (patients with cardiac disease resulting in marked limitation of physical activity). They feel comfortable at rest but in performing less than normal activity patients may feel fatigue, palpitation, dyspnea or anginal pain. Class IV: evidence of severe cardiovascular disease (patient with cardiac disease resulting in the inability to carry on any physical activity without discomfort). The symptoms of cardiac insufficiency or angina syndrome may be present even at rest. If any physical activity is undertaken, patients' feelings of discomfort increase. The mortality associated with myocardial infarction (MI) has much improved in recent years due to the impact of thrombolysis and secondary pharmacological preventive measures (Crilley & Farrer, 2001).

Psychological impact of MI. Psychological impact plays a role in the development and progression of MI and may be one reason that the morbidity and mortality from MI remain high. Stresses are most prevalent in people with MI diseases. The potential for improving a patient's health is high if the stress is identified and treated appropriately. Complete health and overall quality of life affect the psychological and socioeconomic status of patients with MI. A study found that major depression may occur during hospital admission or after first diagnosed myocardial infarction (Bennett, Lowe, Mayfield, & Morgan, 1999). Patients with MI may develop a loss of interest in activities, poor concentration, and a lack of

confidence. Psychosocial factors, including negative emotions and stress, increase the risk of myocardial infarction and are associated with worse outcomes after a myocardial infarction. In another study, Brink, Brandstrom, Cliffordsson, Herlitz, and Karlson (2008) reported that older age, low physical health and low physical activity after myocardial infarction negatively affected returning to work. They also found that psychological and emotional problems were related to the failure to return to work.

   Social and economical impact of MI. The social and economic issues have some impact on patient with MI's health outcome. Patients with MI may want or need help from family member, neighbors, and others. After having heart attack, some patients with MI cannot perform their usual job or cannot earn money. On the other hand, they need to spend more money for follow-up investigations, treatment and purchase of medication. As a result, patients or their families may face an economic crisis. Socioeconomic factors, such as a lower education levels and lower income (particularly in women), and unmarried cohabitation are also correlated with a higher risk of MI in Bangladesh and in developing countries, where most people's economic status is not high. When the patients suffer from MI, they need social and economical support for the expenditure of their treatment (Kristofferzon, Lofmark, & Carlsson, 2005; Rahsid et al., 2005).

   According to Kristofferzon, Lofmark, and Carlsson (2003), women with MI tended to delay seeking treatment and did not want to bother others with their health problems. House hold activities are important to them and aided their recovery. Women tended to report that they have less social support after MI compared with men. They received less information about the disease and rehabilitation and experienced a lack of belief in their heart problems from their caregivers. However,

they received less assistance with usually house hold duties from informal caregivers. Nevertheless, men tended to have more support from their spouses then did the women.

In conclusion, patients are faced with different health-related problems after MI, which disturbs their physical, psychological, social, and spiritual well-being. Both male and female patients expressed similar type of impacts or consequences after MI. In addition, patients with MI are unexpectedly confronted with their own mortality and the potential future impact of their diagnosis, illness, on their occupation, personal lives, and relationship with others. Moreover, patients with MI are often uncomfortable or embarrassed to reveal their symptoms of cardiac health. As a result, MI patients tend not to recognize themselves as having risk factors.

Coping in Patients With Myocardial Infarction

Concept of Coping

Coping is defined as cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person (Lazarus & Folkman, 1984). The concept of coping has been important in psychology for over several decades. It provides an organizing theme in clinical practice and evaluating which focused on psychotherapies and educational programs. According to the model of stress and coping (Lazarus & Folkman, 1984), coping refers to the feeling, thoughts, and actions that people encounter during stress.

In the present study, coping strategies are defined as cognitive and/or behavioral activities that the patients with MI face or minimize the stressful events. Coping is dealing with a situation that an individual perceives as a threat to personal

integrity so that the feeling of fear and grief may be resolved. As we can say, the word coping consists of two central concepts, they are approach and avoidance. In this study we talk about how patients with MI cope with and controls aspects that interfere or affect the situation. Moreover, coping is a technique that human beings use to keep away stress and stressful environments by tending to ignore all the stressors. Some people tend to minimize their stress by seeking support socially and also having a positive attitude despite of the situation.

Dimensions of Coping

Different authors have categorized coping strategies in different ways. In 1966, Lazarus identified two forms of coping which were problem-focused and emotional-focused coping. Problem-focused coping is direct action at defining the problem generative alternative solution. Emotion-focused coping is direct attempt to deal with emotional consequence of the person (Lazarus & Folkman 1984).

Another way to categorize dimension of coping strategies is adaptive and maladaptive. Adaptive coping strategies consist of acceptance, religion, humor, planning, using emotional support, using instrumental support, active coping and positive reframing. Maladaptive coping strategies consult of self-blame, denial, venting, substance use, behavioral disengagement, and self-distraction (Kristainsen, Roberts, & Abrahamsen, 2008).

In addition, Cox and Ferguson (as cited in Lee, Suchday, Wylie-Rosett, 2012) identified four basic dimensions of coping. Problem-focused coping includes active coping and planning. Emotion-focused coping includes seeking emotional support and emotional venting. Reappraisal coping includes positive reinterpretation

and acceptance. Avoidance coping includes denial, mental and behavioral

disengagement.

Functions of Coping

Coping strategies, such as seeking help, learning new skills, and

venting anger are cognitive and behavioral efforts a person uses in response to a

stressor. These strategies are divided into two categories according to their functions.

(1) Problem-focused coping strategies are efforts to do something actively to alleviate

stressful circumstances, in which a person tries to change her/his situation and

environment. It also is managing the external aspects of a stressor, seeking social

support, accepting responsibility, using problem-solving and developing an action

plan. Examples of the problem-focused coping function are making a plan of action or

concentrating on the next step. (2) Emotion-focused coping strategies involve efforts

to regulate emotional consequences of stressful or potential stressful events, in which

a person tries to regulate the emotions, attempts to manage internal demands and

conflict, uses self-control, escape-avoidance, and positive reappraisal. Examples of

emotion-focused coping function are engaging in distracting activities, using alcohol

or drugs, or seeking emotional support.

Problem-Focused and Emotion-Focused Coping

Lazarus and Folkman (1984) divided coping into problem-focused

coping and emotion-focused coping. Patients use a problem-focused strategy when

they believe that they can affect the situation that was caused by their disease or affect

their resources to manage the situation. Problem-focused coping is the use of a

problem-solving process including defining the problem, enumerating alternatives, comparing alternatives in terms of costs and benefits, and finally, selecting an action. Problem-focused coping strategies are enacted when the threat is appraised as being changeable. Learning new self-care skills to confront the demand is a problem-focused coping strategy.

Emotion-focused coping strategies are used when a person concludes that he/she cannot control the stressful stimuli; that is, nothing can modify the harmful threatening event. Patients use emotion-focused strategy by dealing with their emotions. Examples of emotion-focused coping strategies include avoidance, minimization, and distancing, selective attention, mediating, venting feelings, and increasing physical activity as distraction.

Effective and Ineffective Coping

Coping behavior is effective when the behavior used resolves the uncomfortable feeling associated with threat and /or loss. Coping is effective when it keeps distress within manageable limits, generates encouragement and hope, maintains or renews relationships with the significant other, enhances prospects for physical recovery, and enhances prospects for a favorable situation. Effective coping strategies are those that lead to an increase in alteration, adjustment, resilience, and well-being, and a decrease in stress with in an improved overall perceived the situation. Ineffective coping strategies can lead to failure to thrive, uncertainty, increased stress, and a decrease in the overall perception of the situation (Miller, 2000).

Coping Strategies Used by Patients With MI

Patients who are diagnosed with MI have to face many stressful situations, not only for short periods but also over long periods. Different studies revealed that patients with MI used various coping strategies during their illness to deal with their illness and its consequences (Elderen, Maes, & Dusseldorp, 1999; Kristofferzon et al., 2005). They have to change their normal life style and continue to take medication for the rest of their lives. Continuing stress after MI causes fewer patients to return to work and more hospital re-admissions.

According to Lazarus and Folkman (1984), coping is the strategy that a person uses in specific situations. The majority of the patients with MI used both emotion-focused and problem-focused coping strategies. The study of Chiou et al. (1997) explored coping methods patients used after the diagnosis of MI. They found that patients used more optimistic coping and evasive coping strategy which was more helpful for them to deal with their illness. The optimistic coping style was the most used and considered the most effective. The patients with MI tended to cope by using positive thinking and a positive outlook on life. The patients with MI more frequently used coping style were also perceived as the more effective coping styles.

An unpublished research study conducted in Bangladesh by Asgar (2010) reported that among eight types of coping strategies, supportant coping strategies were most often used by patients with MI. The occasional used coping was emotive and palliative coping. The sometimes used coping was overall coping, confrontive coping, evasive coping, optimistic coping, fatalistic coping, and self-reliant coping. This study reported coping strategies used by patients with MI, and

correlation among coping subscales. However, the factors related to coping strategies used were not examined.

Another unpublished research study conducted in Nepal by Panthee (2011) reported that problem-focused coping strategies were more often used than emotion-focused coping strategies. Patients with MI most often used problem-focused coping strategies, namely accepting the things as they are, trying to maintain some control over the situation, trying to find purpose or meaning in the situation. The least often used problem-focused coping strategies were trying to do something even if you are not sure it will work, to change the situation, and solve the problem or handle the situation. In addition, the most often used emotion-focused coping strategies were telling own self not to worry about the problems, hope, pray/trust to God. Whereas, the least often used emotion-focused coping strategies were drinking alcoholic beverage, blaming other for patient's problem, and getting prepared to expect the worst.

Fox-Wasylyshyn, El-Masri, and Krohn (2007) compared the use of coping strategies during an acute cardiac event in patients experiencing a first AMI and a recurrent AMI. The results showed that patients with and without a history of MI tend to respond to their symptoms with similar coping strategies. Sometimes MI patients ignored their symptoms and used emotion focused coping. They also reported that patients with an understanding of MI symptoms used problem focused coping strategies.

In a prospective study of Elderen et al. (1999), approach and avoidance coping were reported to effect anxiety and well-being of patients with coronary heart diseases. Low levels of coping or poor coping predicted high levels of anxiety and

depression which diminished in participants with better levels of coping. This revealed a negative relationship between coping and anxiety at the first measurement point coping and depression at the later measurement point measured coping and depression which both revealed negative relationships.

Kristofferzon et al. (2003) conducted a prospective study and found that women used more coping strategies than men. In addition, women minimized impact of the disease, tended to delay in seeking treatment and did not want to burden their health problems. On the other hand, men are more likely to involve their spouses in recovery, and continue to work and keep physically fit. Women also reported that they had less social support, disease information, and more house hold activities compared to men. In addition, White, Hunter, and Holttum (as cited in Hutton & Perkins, 2008) reported that the women experiencing and ways of coping patients with MI used cognitive coping strategies that included acceptance, religious faith, humor, and the avoidance of thinking about heart attacks.

A study conducted by Bhagyalakshmi, Ramana, Suresh, and Raj (2012) found that majority of patients with CAD had moderate level of coping, and minority of the patients had either level of adequate or inadequate coping strategies. In addition, there was statistically positive correlation between level of stress and level of coping ability.

Factors Related to Coping Strategies

There are many factors related to coping strategies including age, gender, educational level, income, occupation, duration of illness, belief and culture, religion, and social support.

Age

Age is one factor which affects coping among patients with MI. The patients with MI at different ages use different coping strategies to deal with stressful events (Chiou et al., 1997). Older people have more experience and more optimistic coping style than younger people. Older patients prayed to God for the alleviation of their disease, and were more likely to use coping strategies.

Inconsistent with other study in patients with MI who also had post-traumatic stress disorder, older patients used more of ineffective coping strategies. Chung, Berger, Jones, and Rudd (2008) found that older patients used of coping strategies, including seeking emotional social support, suppression of coping activities, restraint coping, venting of emotion, and behavioral disengagement.

Gender

Women diagnosed with MI experienced a higher level of stress than men. Moreover, in different cultures women appear at higher risk and have a poorer prognosis than men for stress after MI. The result was consistent in both western and eastern cultures including, Australia, England, Japan, South Korea, and the United States (Moser, 2007). A study conducted by Kristofferzon et al. (2003) reported that female patients used more coping strategies after diagnosis of MI than males. In a study by Kristofferzon et al. (2005), women were shown to use more evasive coping than men after diagnosis of illness. In addition, White, Hunter, and Holttun (2007) reported women's perception of cardiac event and coping strategies. Women tended to minimize severity of symptoms and impact of even displaying a strong sense optimism and hope that life would soon return to normal. In another study conducted

in Ireland by Walsh, Lynch, Murphy, and Daly (2004), 61 patients diagnosed with AMI were surveyed. Demographics, clinical history, and distance from hospital were used in the study. It was found that gender was a significant predictor, with females having a longer delay seeking treatment than males. The researchers also found that all women consulted a lay person before calling a physician thereby adding to delay times. However, male patients adopted an active-cognitive and problem-focused coping response to their symptoms had the shortest delay times.

Educational Level

Level of education is regarded as an essential prerequisite to coping of patients with MI. Fox-Wasylyshyn et al. (2007) surveyed 135 AMI patients from four hospitals in the United States and Canada. The results revealed that patients with MI who had lower level of education were more likely to take prescription medication. Patients with MI who had higher level of education were more likely to engage in taking non prescription medication. The results indicated that level of education was related to the strategies that patients used to deal with the illness. The patients with higher level of education reported to use more of coping strategies that reflected attempt to manage the situation actively. Consistent with a study conducted by McConnell, Trevino, and Klinger (2011), they found that patients with first-time cardiac event who had lower level of education reported greater prevalence of plead coping or bargaining with God regarding their disease. Patients with lower level of education tended to use more of coping strategies that regulate their emotion.

The other study conducted in breast cancer patients and spouses by Ben-Zur, Gilbar, and Lev (2001) also reported the consistent findings. The

associations between the patients' demographic characteristics and coping strategies were examined. The results from regression analysis revealed that age, education, and work accounted for 19 % of variation in coping strategies, with patients' education alone having significant negative association with the patients' emotion-focused coping. They suggested that patients with high level of education may have more ability to understand the situation and information effectively and use less of emotion-focused coping strategies.

Income

Low income patients are not able to spend money on medication and regular medical investigation. Rasmussen et al. (2006) found that income level independently affect mortality after AMI. They also reported that low socioeconomic status was risk factor for the patients with MI.

Consistent with other studies were in Turkish patients with diabetes. Tuncay, Musabak, Gok, and Kutlu (2008) indicated that patients with diabetes experienced an effect on their physical, psychological, social and economic well-being. They found the importance of taking individual coping strategies into account when evaluating the impact of diabetes that they were likely to use self-blame and behavioral disengagement as a coping strategy.

Occupation

There is a general expectation that unemployed patients may show a higher level of stress. However, Brink et al. (2008) found no relationship between occupation and stress and insecurity about returning to work. The subjects expressed

difficulty in returning to their jobs as their colleagues thought they may die at any moment. Moreover, many MIs occur during the working age of the patients, and such acute events may discourage patients from returning to work.

Malinauskiene, Grazuleviciene, Malinauskas, and Azaraviciene (2004) conducted a study on the psychosocial characteristics at work and the risk of MI in the occupational categories. The study found that low job control was increased myocardial infarction risk in the population of 25-64 years old men. They also found that low job controls were significantly increased in high risk occupational categories.

Duration of Illness

Duration of illness refers to how long the patients have known they have had a myocardial infarction (MI). As the duration of the stressful event is a situational factor which influences the appraisal of coping strategies (Lazarus & Folkman, 1984), then the time since the diagnosis is a factor as well. Brown, Brown, and Jason (2010) examined coping strategies and illness duration in chronic fatigue syndrome. The researchers found that patients with longer illness duration used more active coping, positive reframing, planning, and acceptance, and used less of behavioural disengagement. Moreover, Doering et al. (2004) found that the avoidance coping style was related significantly higher with negative emotional states including confusion, fatigue, stress, anger, and depression. Different patterns of coping strategies are influenced by the perceived severity of the illness. On the other hand, patients with shorter illness duration used behavioral disengagement at a lower level. Therefore, the researchers suggested that longer or shorter duration of illness have differences in coping styles that the patients used.

Belief and Culture

These are the beliefs, values, behavior and material objects that constitute people's way of life. Culture is one factor that is related to illness perception and coping strategies (Lazarus & Folkman, 1984), so cultural issues may be a factor as well. In addition, Selim (2010) explored that the cultural dimension of depression. He also reported that most participants' two villages Matlab in Bangladesh usually somatic complaints, e.g. loss of appetite, sleeping problems, multiple pain, burning sensations, fear, palpitations, weakness, and financial problems. The study also reported that older men and women felt that physical problems made them worry about their future. This was not a major issue for the younger people.

Religion

Religion is a resource for dealing with stressful events. Positive religious coping strategies reflect a secure relationship with an inspiring energy and a sense of spiritual connection with others. Negative religious coping strategies reflect underlying spiritual tensions and struggles within oneself and others, and with the Divine (Pargament, Feuille, & Burdzy, 2011). In addition, Kasi et al. (2012) studied the frequency of different coping styles used by general population with symptoms of anxiety and depression and found that religious coping was the most common coping strategy, with the significant proportion of individuals finding comfort and relief in different religious practices.

Social Support

Social support refers to the actual receipt of emotional or information helps from others, and the subjective perceptions of support. The hospitalized patients with MI perceived more emotional support from health professionals, family members, spouse/partners and relatives. Social supports influence how persons manage these stressful situations associated with MI. Patients with MI reported that two most frequently used coping strategies were seeking social support and positive reappraisal that is problem-focused coping. Ultimately, coping and social support may influence the decision to seek health care services for patients' symptoms (Stewart, Hirth, Klassen, Makrides, & Wolf, 1997).

Assessment of Coping Strategies

Several instruments have been developed by many researchers to measure different aspects of coping. In this study, the researcher reviewed the use of three measures or instruments to describe the coping strategies used by patients with MI.

Ways of Coping Questionnaire (WOCQ). Lazarus and Folkman (as cited in Stewart et al., 1997) developed 67 items of the self administered, Ways of Coping Questionnaire (WOCQ), which is based on the stress, appraisal, and coping theory. The Ways of Coping Questionnaires with eight subscales of coping strategies were used in Stewart et al.'s study. The eight subscales were categorized in two dimensions: problem-focused and emotion-focused. The problem-focused coping subscales are seeking social support, painful problem-solving, positive reappraisal, and confrontational coping. The emotion-focused coping subscales are distancing,

escape-avoidance, self-control, and accepting responsibility. During the hospital interview, patients were asked to determine the patients' coping strategy. For example, "How have you dealt with/managed your heart disease since being in hospital?"

Respondents are required to select one number of the coping methods which are rated by a 4-point Likert scale (0 = not used, 1 = used somewhat, 2 = used quite a bit, and 3 = used a great deal). Internal consistency reliabilities from previous research studies for the eight subscales ranged from .61 to .70 (Stewart et al., 1997).

Jalowiec Coping Scale (JCS). The second instrument is the JCS (Jalowiec, Murphy, & Powers, 1984). The instrument consists of 40 coping strategies based on a comprehensive and critical literature review which are rated on a 1to 5 point scale to indicate never = 1, occasionally = 2, sometimes = 3, often = 4, and almost always = 5. It consists of 15 problem-focused and 25 emotion-focused coping strategies. A higher score suggests the more often use of strategies in each subscale. This instrument assesses either general coping behavior or situation-specific coping used by hypertensive and emergency room patients. However, the JCS focuses on situation-specific coping behavior. So, it will not be appropriate for use in the present study.

Brief COPE Scale. Carver, Scheier, and Weintraub (1989) developed the COPE inventory as a comprehensive questionnaire which has proved to be useful in health-related research. The full COPE scale was 60-item multidimensional, with 15 subscales comprised of four items in each subscale. The subscales then represent coping style or strategies (Carver et al., 1989). The scale was administered to assess

patients' coping strategies regarding constant worry and clinical outcome. The coping subscales also can be divided into major categories: problem-focused coping and emotion-focused coping. Problem-focused coping comprises of active coping, planning, suppression of competing activities, restraint coping, seeking of instrumental social support. Emotion-focused coping strategies comprises of seeking of emotional social support, positive reinterpretation, acceptance, denial, turning to religion and the three scales less useful venting of emotions, behavioral disengagement, and mental-disengagement.

In 1997, Carver created a shorter version of the COPE which is called the Brief COPE. It was created because in earlier patient samples, the subjects became impatient when responding to the full instrument. The overall time taken by the assessment protocol was burdensome. The original three scales needed slight modification. The positive reinterpretation was modified to be positive reframing. The scale of venting of emotions was modified to be venting. The scale of mental disengagement was modified to be self-distraction. In addition, the original COPE did not have a measure of self-blame. In 1997, Carver added items of self-blame in the Brief COPE.

Therefore, the Brief COPE is a 28-item tool that measures 14 conceptually differentiable coping strategies. Each of 14 sub-scales consists of two items. Participants are asked to respond to each item on a four-point Likert scale, what they indicated what they generally do and feel when they experience MI related to stressful events, with 1= I have not been doing this at all to 4 = I have been doing this a lot. The higher the score on each coping strategy will depict a greater use of the specific coping strategy.

The Brief COPE was used in a study conducted by Chiavarino et al. (2012) to assess coping strategies in cardiac patients. They reported that the subscales problem-focused coping included are: use of active coping (items 2 and 7), planning (items 14 and 25), and using instrumental support (items 10 and 23). The emotion-focused coping subscales are: use of acceptance (items 20 and 24), religion (items 22 and 27), using emotional support (items 5 and 15), humor (items 18 and 28), and positive reframing (items 12 and 17), and dysfunctional coping strategies self-blame (items 13 and 26), denial (items 3 and 8), venting (items 9 and 21), substance use (items 4 and 11), behavioral disengagement (items 6 and 16), and self-distraction (items 1 and 19). Internal consistencies for emotion-focused, problem-focused, and dysfunctional subscales from the previous studies were reported with Chronbach's coefficients alpha ranged from .70-.78.

Another study conducted in patients with diabetes, Tuncay et al. (2008) reported Cronbach's alpha of the Brief COPE of .82. With regard to the internal consistency of the 14 sub-scale of coping strategies, Cronbach's alphas from previous research studies ranged from .71 to .96. The Brief COPE scale (Carver, 1997) was used in the present study to assess the coping strategies in patients with MI. It is simple to understand and easy to administer. Reliability and validity are well established and it has frequently been used. Moreover, it is less burdensome in terms of time and responses for patients with MI.

Summary of Literature Review

The review of the relevant literature illustrates that patients with MI often experience many psychological problems during the recovery phase. The

diagnosis of MI has an enormous impact on patients' physical, psychological, and social functioning. Patients with MI become physically disable, psychologically depressed, socially isolated and they face economic crises. In addition, the patients with MI feel pressured about their future life, treatment facilities, problems of self care or dealing with physical difficulties, and possible loss of their jobs. Patients who lose hope and discontinue the use of coping strategies are less likely to return to work and are frequently readmitted to hospital with health problems related to their MI.

This literature review shows that there was a gap in Bangladesh regarding coping strategies and related factors in patients with MI. There are no research studies reported of coping strategies and related factors in patients with MI in Bangladesh.

CHAPTER 3

RESEARCH METHODOLOGY

This chapter presents the information of the research methodology used in this study. It consists of research design, study population and setting, sample size, instrumentation, protection of human rights, data collection, and data analysis.

Research Design

This study was a descriptive study. The purposes of this study were to identify coping strategies frequently used by patients with MI and examine the factors related to the coping strategies among the patients with MI.

Population, Setting, and Sample

Population

The target population of this study was patients with myocardial infarction who were treated at outpatient department (OPD), coronary care unit (CCU), and medical ward.

Setting

The subjects were recruited from the outpatient department (OPD), coronary care unit (CCU), and medical ward at Shaheed Ziaur Rahman Medical College Hospitals (SZMCH), Bogra, Bangladesh. This hospital is the largest government hospital in the northern part of Bangladesh. This hospital was selected to

be the setting for this study because it is a tertiary referral level medical college hospital. It is a 500-bed hospital. More than 700 patients visit this hospital each day. Everyday all types of patients come to this hospital and to get health service. Patients mainly come to this hospital from primary and secondary levels of government hospitals and private clinics nearby districts, such as Sirajgong, Naogaon, Joypurhat, Natore, Gaibandha etc. The SZMCH provides care to both rural and urban people. Each month a total of 112 patients with MI were admitted in the CCU and medical ward each month (CCU & Medical Ward, Daily Patients Admission Register, 2013). Cardiologists work 2 days a week and provide care for approximately 80 cardiac patients at the OPD each month (Cardiac Outpatients Department Register, 2013). The patients with MI visit their cardiologist directly in the OPD and there is no health care service provided by nursing personnel. It is directly responsible of cardiologist to take care of the patients with MI in OPD. During the visit, each appointment is determined jointly by the patients and cardiologist. Furthermore, cardiologists work in the CCU and take care of admitted patients every day from 9.00 am to 2.00 pm. They are on-call 24 hours to cover the care in case of emergencies. Nurses work three shifts to provide 24-hour care for patients.

Sample

The sample was selected from the target population if they met the following inclusion criteria:

1. Being diagnosed with MI

2. Age >18 years old

3. Admitted in coronary care unit (CCU), medical ward or attending the outpatient department (OPD) for follow up

4. Chest pain free and hemodynamically stable at the time of assessment

5. Full consciousness and free of noncardiac serious or life-threatening comorbidities

7. Able to communicate and understand in the local language, and

8. Willing to participate in the study.

Sample Size. The number of subjects in this study was calculated by using Taro Yamane's formula. Yamane (1967) provides a simplified formula to calculate sample sizes. Where *n* is the size of the sample, *N* is the size of the population, and *e* is the level of precision. The formulation of Yamane Taro Statistics is as follows:

$n = N/ (1+Ne^2)$

When n = sample, N = Population (192), *e* = error estimation ± 5%

$n = 192 / [1+192(.05)^2]$, n = 192/ (1+192 X .0025), n = 192/ (1+ .48), n = 192/1.48, n = 129.

However, during a 3-month study period, only 88 subjects met the inclusion criteria. They all then were approached. Although this sample size (N = 88) was only 68.2% of the desired sample size, it was considered to be adequate to provide preliminary findings useful for the future nursing research in this area.

Instrumentation

Instruments

The instruments used for data collection in this study consisted of two parts:

1. The Demographic Data Assessment and Health Related Questionnaire (DDA & HRQ)

2. The Brief COPE (Coping Orientation Problems Experienced) scale.

Demographic Data Assessment and Health Related Questionnaire (DDA & HRQ). The DDA and HRQ were developed by the researcher to assess the demographic information of the patients with MI, including age, gender, marital status, residential area, educational level, religion, occupation, and income of patients with MI. Health related data including duration of illness, history of smoking, alcohol use, diabetes, hypertension and a family history of patients with MI also was collected. These data were collected after obtaining written consent from the patients with MI.

Brief COPE Scale. The Brief COPE scale consisting of 28 self-report items was used. The Brief COPE comprises of 28 items categorized in to 14 subscale coping strategies that are self-blame (items 13 and 26), denial (items 3 and 8), venting (items 9 and 21), acceptance (items 20 and 24), religion (items 22 and 27), humor (items 18 and 28), planning (items 14 and 25), using emotional support (items 5 and 15), using instrumental support (items 10 and 23), substance use (items 4 and 11), active coping (items 2 and 7), behavioral disengagement (items 6 and 16), positive reframing (items 12 and 17), and self-distraction (items 1 and 19) (Carver, 1997). The subjects were asked to rate on a 4-point Likert scale, with scores ranging

from 1 = I haven't been doing this at all to 4 = I've been doing this a lot. The scores of each coping subscale were derived from the sum score of two respective items. Possible scores of each coping subscale range from 2 to 8. The higher scores indicated the more frequently used of that coping strategy (Carver, 1997).

Reliability of the instruments. The reliability of the Brief COPE scale was examined using test-retest reliability in 20 patients with MI. Data were collected twice within 3 days, using the same subjects with the same questionnaire. In this study the reliability was examined, resulting percentage of agreement for the subscales ranged from 40% to 70% (Appendix E).

Translation of the instruments. The original English version of the instrument was translated into the Bengali language using the translation-back translation technique (Hilton & Skrutkowski, 2002) with the help of three bilingual translators as follows:

1. The first Bengali translator translated the original English version instrument into Bengali language.

2. The second Bengali translator back-translated those instruments from the Bengali version to English.

3. The third bilingual translator then compared the original English version and the translated English version of them. There were no discrepancies in both versions. The translators suggested equivalent meanings in both the original version and the back-translated version.

Ethical Considerations

Ethics approval was obtained from the Research Ethics Committee of the Faculty of Nursing, Prince of Songkla University. The study was conducted with the intention of protecting the rights of the subjects. They were provided with all necessary information and an opportunity to ask any questions. A simple language statement was provided to the subjects. The researcher provided clear verbal and written explanations about the study to cover all steps they needed to do in the study. Subjects were assured that they had the right to withdraw from the study at any time. Their identities were respected for anonymity and confidentiality. All collected information was kept confidential. The results of this study were presented in an aggregate form and for academic purposes only.

In this study there was minimal risk during participation. The subjects might experience constant worry when completing questionnaires because they might be reminded that they were patients with MI. It is necessary to weigh the consequences in terms of psychological impact. The researcher planned to stop collecting the data and allowed time for relief. In addition, the researcher would calm the subjects down by diverting their attention, provided psychological support and talking about other matters. Moreover, the researcher would communicate with the physician and nurses if needed. In the data collection process, no patients encountered any psychological impact.

Data Collection Procedure

The data collection plan was divided into two phases: the preparation and implementation phases.

Preparation phase. Data were collected after getting written permission from the Faculty of Nursing, Prince of Songkla University, and the thesis proposal was approved by the Research Ethics Committee of the Faculty of Nursing. The researcher asked for permission from the Director of Shaheed Ziaur Rahman Medical Collage Hospital (SZMCH) Bogra, Bangladesh. The researcher met the director of SZMCH, the head of the department of the cardiology unit and the nursing superintendent. In addition, the researcher explained the study objectives, the method of data collection and obtained permission for conducting the research.

Implementation phase. After getting permission from the authority of the study setting, the researcher asked in-charge nurse of the wards and outpatient department (OPD) to identify eligible subjects. After permission was granted, each subject was asked for interview in a separate room. The researcher explained to each subject about the objectives and the benefits of the study and asked them to participate in the study. Subjects were informed about their right to participate or withdraw at any time without any consequences. Subjects who agreed to participate gave written consent. The researcher distributed a set of questionnaires including the Demographic Data Assessment and Health Related Questionnaire (DDA & HRQ), and the Brief COPE Scale. The researcher explained to them how to complete the questionnaires. Subjects were asked if they had any questions. For illiterate subjects, the researcher read the questions and filled in the questionnaire according to their answers given. Each subject spent approximately 25-30 minutes to respond to the questionnaires.

After completing the questionnaires, the researcher checked the completion of the questionnaires.

Data Analysis

The data analysis was performed by using descriptive statistics and inferential statistics. Descriptive statistics were used to obtain demographic and health related characteristics data, frequency, percentage (%), mean, standard deviation (SD), and range. For inferential statistics, an independent *t*-test was used for between groups and ANOVA were used for testing more than three groups. Pearson's correlation (*r*) was used to examine relationship between factors and coping strategies. The assumptions were tested for normal distribution, linearity, and homogeneity of variance.

Normality. Normality was detected by examining skewness and kurtosis. The distribution of data was considered normal if the skewness ratio and kurtosis ratio were within the range of ±3. For this study, the scores obtained from the Brief COPE scale was normally distributed (Appendix D).

Linearity. Linearity is the assumption that there is a straight line relationship between two variables. Linearity between two variables (each independent variable and dependent variable) was assessed roughly by the inspection of bivariate scatter plots. The scatter plots were used to determine whether or not the relationship between each independent variable (predictor) and dependent variable was linear. It was found that the relationship between each independent variable and dependent variable was represented by a straight line.

Homogeneity of variance. Homogeneity of variance is important assumption required for independent *t*-test and ANOVA. Levene's test was analyzed to assess equality of variances, yielding the p-value of greater than .05. Therefore the assumption of homogeneity of variance was ascertained.

CHAPTER 4

RESULTS AND DISCUSSION

This chapter presents the results and discussion of the findings of the study. Eighty-eight patients diagnosed with MI who visited the outpatient department for follow ups or were admitted at inpatient departments at SZMCH were recruited for this study. The results and discussion of the study are presented in the following sequences:

1. Demographic and health-related characteristics

2. Coping strategies used by patients with MI

3. Factors related to coping strategies used by patients with MI

Results

For the duration of the data collection period, a total of 100 patients were approached to participate in this study. Twelve patients refused to participate because they did not have enough time to answer to the questionnaires. A total of eighty-eight patients with MI participated in this study.

Demographic Characteristics

The demographic characteristics of the subjects are shown in Table 1. The subject's ages ranged from 23-82 years, with a mean of 51.25 years ($SD = 13.46$). Most of the subjects (60.2%) were middle-aged adult. The sample comprised of 61 males (69.3%) and 27 females (30.7%). Most of the subjects were married (62.5%). Nearly half of the subjects (43.2%) lived in rural areas. Almost half of the subjects

completed higher education (42%). The majority of the subjects (92%) was Islam.

However, nearly half of the subjects (45.5 %) had income per month of 5,000-10,000

Taka, which is equal to 1,830-3,660 Thai- Baht. Nearly one third of the subjects

(28.4%) were business persons.

Table 1

Frequency and Percentage of Demographic Characteristics of the Subjects (N = 88)

Characteristics	Frequency (*n*)	Percentage (%)
Age (Years)		
(Mean = 51.25, SD = 13.46, Min = 23, Max = 82)		
Young Adult (20-40 years)	22	25.0
Middle Adult (41-65 years)	53	60.2
Elderly (> 65 years)	13	14.8
Gender		
Male	61	69.3
Female	27	30.7
Marital status		
Married	55	62.5
Unmarried	16	18.2
Widowed/widower	17	19.3
Residential areas		
Rural	38	43.2
Urban	50	56.8
Educational level		
No formal education	24	27.3
Primary education	27	30.7
Higher education	37	42
Religion		
Islam	81	92.0
Hindu	7	8.0
Occupation		
Farmer	19	21.6
Government employee	14	15.9
Private employee	11	12.5
Business person	25	28.4
Retired Person	10	14.4
Others	9	10.2
Incomes per month (Taka)		
<5,000	26	29.5
5,000-10,000	40	45.5
>10,000	22	25.0

Health Related Characteristics

Health related characteristics of the subjects are shown in Table 2. The majority of the subjects had less than one year after the diagnosis of MI ($n = 58$, 65.9%). Most of the subjects reported that they had a history of smoking (63.6%), and hypertension (62.5%) and no history of alcohol use (84.1%). More than half of the subjects reported no family history of MI (59.1%). The majority of subjects reported no history of diabetes (75%).

Table 2

Frequency and Percentage of Health Related Characteristics of the Subjects (N = 88)

Characteristics	*n*	%
Duration of illness		
Less than 1 year	58	65.9
More than 1 year	30	34.1
History of smoking		
Yes	56	63.6
No	32	36.4
History of alcohol use		
Yes	14	15.9
No	74	84.1
History of diabetes		
Yes	22	25.0
No	66	75.0
History of hypertension		
Yes	55	62.5
No	33	37.5
Family history of MI		
Yes	36	40.9
No	52	59.1

Coping Strategies Used by Patients With MI

Table 3 shows the mean, and the standard deviation of the coping strategies used by patients with MI. The three most frequently used coping strategies were self-blame ($M = 5.19$, $SD = 1.63$), denial ($M = 5.16$, $SD = 1.49$), and venting ($M = 5.13$, $SD = 1.36$). Whereas, the three least frequently used coping strategies were self-distraction ($M = 4.58$, $SD = 1.65$), positive reframing ($M = 4.66$, $SD = 1.52$), and behavioral disengagement ($M = 4.76$, $SD = 1.31$).

Table 3

Mean, Standard Deviation (SD) and Coping Strategies Frequently Used by the

Patients With MI (N = 88)

Subscale	*M*	*SD*
Self-blame	5.19	1.63
Denial	5.16	1.49
Venting	5.13	1.36
Acceptance	5.09	1.52
Religion	5.09	1.35
Humor	5.05	1.44
Planning	4.89	1.71
Using emotional support	4.89	1.41
Using instrumental support	4.85	1.53
Substance use	4.85	1.42
Active coping	4.81	1.21
Behavioral disengagement	4.76	1.31
Positive reframing	4.66	1.52
Self-distraction	4.58	1.65

Factors Related to Coping Strategies Used by Patients With MI

Demographic and health-related factors were examined to find out whether they were related to the coping strategies of the patients with MI. Pearson's correlation (*r*) was used to examine correlation between coping strategies and age. Independent *t*-test was used to compare coping strategies between 2-level independent

variables (gender, residential area, and duration of illness), and one-way analysis of

variance (*F*-test) for more than 2-level variables (educational level).

The Pearson's correlations coefficients (*r*) between the coping

strategies and age are presented in Table 4. The results show that there was no

significant correlation between coping strategies and age.

Table 4

Correlation Between Coping Strategies and Age of Patients With MI (N = 88)

Coping Strategies	Age	
	Correlation coefficient (*r*)	*p*-value
Self-Blame	.02	.87
Denial	.02	.89
Venting	-.09	.41
Acceptance	.02	.88
Religion	-.03	.80
Humor	.00	.97
Planning	-.11	.31
Using emotional support	.10	.36
Using instrumental support	.03	.76
Substance use	.11	.29
Active coping	-.11	.29
Behavioral disengagement	.15	.16
Positive reframing	-.04	.72
Self-distraction	.14	.18

The results in Table 5 present comparison of the mean scores of coping

strategies used by patients with MI according to gender. There was no significant

difference of coping strategies used between male and female, except the subscale of

venting coping strategy. Male significantly used subscale of venting coping strategy

more than female (*t* = 2.26, *p* < .05). Female tended to use coping subscales of denial

coping strategy more than male (*t* = -2.00, *p* = .05).

Table 5

Comparing Mean Differences of Coping Strategies Used by Patients With MI

According to Gender (N = 88)

Coping Strategies	Male (*n* = 61)		Female (*n* = 27)		*t*	*p*-value
	M	*SD*	*M*	*SD*		
Self-blame	5.18	1.58	5.11	1.73	0.18	.85
Denial	4.95	1.35	5.63	1.69	-2.00	.05
Venting	5.28	1.26	4.59	1.42	2.26	.03
Acceptance	5.13	1.56	4.78	1.45	1.00	.32
Religion	5.13	1.33	4.89	1.52	0.75	.45
Humor	4.89	1.41	5.41	1.47	-1.58	.12
Planning	5.02	1.70	4.41	1.60	1.57	.12
Using emotional support	4.97	1.32	4.52	1.50	1.40	.16
Using instrumental support	4.82	1.48	4.93	1.66	-0.30	.77
Substance use	4.77	1.43	4.81	1.41	-0.13	.89
Active coping	4.77	1.27	4.78	1.01	-0.03	.98
Behavioral disengagement	4.67	1.30	4.89	1.28	-0.72	.47
Positive reframing	4.77	1.46	4.30	1.56	1.37	.17
Self-distraction	4.70	1.66	4.30	1.63	1.07	.29

The results in Table 6 show comparison of the mean scores of each coping strategy used by patients with MI according to residential area. The statistical analysis findings show no significant differences.

Table 6

Comparing Mean Differences of Coping Strategies Used by Patients With MI

According to Residential Area (N = 88)

Coping Strategies	Rural (*n* = 38)		Urban (*n* = 50)		*t*	*p*-value
	M	*SD*	*M*	*SD*		
Self-blame	5.24	1.51	5.10	1.71	0.39	.70
Denial	5.08	1.47	5.22	1.51	-0.44	.66
Venting	5.13	1.33	5.02	1.36	0.38	.70
Acceptance	5.05	1.67	5.00	1.42	0.16	.87
Religion	5.13	1.51	5.00	1.30	0.44	.66
Humor	5.03	1.49	5.06	1.42	-0.11	.91
Planning	4.71	1.69	4.92	1.70	-0.57	.57

Table 6 (continued)

Coping Strategies	Rural (n = 38)		Urban (n = 50)		t	p-value
	M	SD	M	SD		
Using emotional support	5.11	1.48	4.62	1.29	1.64	.10
Using instrumental support	5.03	1.65	4.72	1.44	0.93	.36
Substance use	4.68	1.49	4.86	1.37	-0.57	.57
Active coping	4.76	1.30	4.78	1.11	-0.07	.95
Behavioral disengagement	4.53	1.39	4.90	1.20	-1.35	.18
Positive reframing	4.63	1.51	4.62	1.51	0.04	.97
Self-distraction	4.58	1.65	4.58	1.67	0.01	.99

The results in Table 7 show comparison of the mean scores of coping strategies used by patients with MI according to duration of illness. There was no significant difference of coping strategy used by patients with MI who had duration less than one year of illness and more than one year of illness.

Table 7

Comparing Mean Differences of Coping Strategies Used by Patients with MI According to Duration of Illness (N = 88)

Coping Strategies	Less than 1 year (n = 58)		More than 1 year (n = 30)		t	p-value
	M	SD	M	SD		
Self-blame	5.26	1.58	4.97	1.71	0.80	.43
Denial	5.19	1.46	5.10	1.56	0.27	.79
Venting	5.24	1.32	4.73	1.33	1.70	.09
Acceptance	4.98	1.53	5.10	1.53	-0.34	.74
Religion	5.09	1.30	5.00	1.57	0.27	.78
Humor	5.00	1.49	5.13	1.35	-0.41	.68
Planning	4.72	1.74	5.03	1.58	-0.81	.42
Using emotional support	4.71	1.42	5.07	1.31	-1.15	.25
Using instrumental support	4.69	1.59	5.17	1.39	-1.39	.17
Substance use	4.64	1.44	5.07	1.33	-1.35	.18
Active coping	4.76	1.18	4.80	1.21	-0.15	.88
Behavioral disengagement	4.62	1.29	4.97	1.27	-1.19	.24
Positive reframing	4.76	1.60	4.37	1.27	1.16	.25
Self-distraction	4.40	1.68	4.93	1.57	-1.45	.15

The results in Table 8 show comparison of the mean scores of coping strategies used by patients with MI according to educational level. There was no significant difference of coping strategies used by patients with MI according to education level.

Table 8

Comparing Mean Differences of Coping Strategies Used by Patients With MI According to Educational Levels (N = 88)

Factor	n	M	SD	F	p-value
Educational Level				0.33	.71
No education	24	62.58	6.35		
Primary education	27	63.56	4.81		
Higher education	37	63.97	7.58		

Discussion

This study aimed to identify the coping strategies frequently used by patients with MI and to examine the factors related to coping strategies among patients with MI. This cross-sectional study was conducted in a tertiary hospital situated in the northern part of Bangladesh. Eighty-eight patients with MI were purposively recruited from SZMCH, Bogra, Bangladesh to participate in the study.

Demographic and Health Related Characteristics

The findings indicated that the subjects' age ranged from 23-82 years with the mean age of 51.25 years old (*SD* = 13.46). The majority of the subjects was above 41 years of age and was mainly male (69.3%). The data were congruent with previous study. The incidence of MI increased with age and was higher in men than

women (Muhit et al., 2012). The number of male patients admitted to the inpatient and outpatient departments at SZMCH was slightly higher than the female patients as the incidence of male patients suffering from MI are higher than female patients. The results were consistent with one study. Rahsid and colleagues (2005) reported that majority of subjects who suffered from MI were male. Men are at greater risk of MI. Moreover, patients who came to visit the hospital were patients from urban areas more than rural areas. The fact of urbanization raises the risk of MI disease (Das et al., 2011). Majority of subjects in this study reported history of smoking (63.6%). Rahman and Zaman (2008) also found that a history of using tobacco was strongly associated with coronary heart disease.

In this study, the majority of the subjects ($n = 55$, 62.5%) was married. Unsurprisingly, most of the participants' religion was Islam (92%). This might be related to the fact that Islam is the main religion in Bangladesh. For the most part, the subjects were Muslim and their religion asserts that alcohol use is harmful to health. In this study, the majority of subjects (84.1%) had no history of alcohol use. In addition, most of the subjects had a history of hypertension (62.5%). Muhit et al. (2012) revealed a clinical condition prevailing in patients was hypertension.

In Bangladesh, there is no policy to provide medication for discharged patients. Therefore, all medication is bought from outside the hospital by the patients. About one third of the subjects had an income of less than 5000 Taka, which is equal to 1,830 Thai-Baht per month. The results indicate that the subjects in this study were in a low socio-economic group. The duration of the illness was less than one year after having been diagnosed with MI (65.9%).

Coping Strategies Used by Patients with MI

The result shows that most of the patients with MI used different types of coping strategies. The patients with MI used various strategies to cope with stress arising from the diagnosis of myocardial infarction. This study identified the coping strategies which were ranked as frequently used. The three most frequently used coping strategies were self-blame, denial and venting. The three least frequently used coping strategies were self-distraction, positive reframing, and behavioral disengagement.

Lazarus and Folkman's stress, appraisal, and coping theory posits that coping refers to the feelings, thoughts, and actions that people encounter during stress. Coping is a cognitive and behavioral effort to manage specific external and/or internal demands (Lazarus & Folkman, 1984). Patients use emotion-focused coping strategy to regulate their emotions by acting and thinking. When patients use problem-focused coping strategies, they believe that they can affect the situation that was caused by their disease or affect their resources to manage the situation. Emotion-focused and problem-focused coping strategies may be used simultaneously or alternately. It is important that the two coping strategies may occur in the same situation. The results from this study revealed that the subjects used more emotion-focused coping than problem-focused coping strategies. The results were congruent with previous study that was reviewed in patients with advanced cancer (Thomsen, Rydahl-Hansen, & Wagner, 2010). The results supported that the patients with MI used more emotion-focused coping than problem-focused coping which were consistently documented in other illness population, such as cancer.

Moreover, previous research studies reported that cardiac patients used emotion-focused coping and problem-focused coping to deal with their stressful situations (Khan, Hassan, Kumar, Mishra, & Kumar, 2012). The findings from the present study also imply that most of the subjects may appraise their stressful and threatening disease and attempted to utilize coping strategies to maintain their psychosocial well-being.

In this study, patients with MI frequently used self-blame as the most frequently used coping strategy. Self-blame is a strategy that one criticizes oneself for responsibility in the situation, as the most frequently coping strategies being used. Self-blame was used as their coping strategy by those who had been diagnosed with a stressful situation.

In addition, patients with MI reported denial as the second most frequently used coping strategy. Denial might benefit patients to cope with the illness. A little denial can be a good thing for patients with MI. Being in denial for a short period can be a healthy mechanism for them to deal with the illness. Using denial coping strategies provide patients with MI the opportunity to absorb shocking or distressing information. After a stressful event, the patients with MI might need to fully process what has happened and come to grips with the challenges. Denial is a helpful response to stressful information for the patients with MI. However, patients with MI also approached their situation more rationally and took action by seeking help. Utilizing emotion-focused coping strategies appropriately facilitate patients with MI to recover from stressful situation (Chiavarino et al., 2012).

Venting is considered one of emotion-focused coping strategy. Results from this study revealed that patients used venting as the third frequently used coping strategy. The findings also imply that most of the subjects appraised their stressful and threatening illness and attempted to develop emotion-focused coping strategies. The results were congruent with the study conducted by Bennett et al. (1999). They found that venting coping strategies were used by the patients with MI while in the hospital. Venting, one of emotion-focused coping strategies, might be helpful to reduce psychological distress resulting from threatening disease.

In addition, the results from this study revealed that behavioral disengagement was one of three least frequently used coping strategies. Behavioral disengagement is a coping strategy that reduces one's effort to deal with the stressor, even giving up the effort to accomplish goals. It is the opposite of proactive behavior. Behavioral disengagement is also compared with conditions such as helplessness. The patients with MI tend to internalize their problems and blame themselves. It is most likely to occur when people expect poor coping outcomes (Carver et al., 1989).

Positive reframing was reported by patients with MI in this study as one least frequently used coping strategies. Lazarus and Folkman (1984) regarded positive reframing as a type of emotion-focused coping. Patients with MI aimed at managing distress emotions rather than at dealing with the stressor. Positive reframing coping strategy was particularly helpful for patients with MI to achieve a higher satisfaction level during the diagnosis period of stressful situation. Bangladeshi people traditionally, culturally, and religiously believe that providing care and support are their ethical responsibility. In this study the patients with MI used positive

reframing coping strategy to deal with the most bothersome of the stressful situation. The patients with MI was the more unsatisfied, they felt at stressful diagnosed period.

Self-distraction was also reported as one of the least frequently used coping strategy by subjects in this study. Self-distraction entails focusing away from the stress. A possible explanation was that MI was perceived as a serious and life threatening disease. They were worried about impact of MI. They were also worried that these symptoms might come again. For this reason, patients with MI did not feel safe and protected. They could not do thing that they really wanted. In this study lower scores on the question of self-distraction that is, "turning to work/other activities to take my mind off things or going to movies, watching TV, reading book, daydreaming, sleeping, or shopping." Patients in this study used less of self-distraction. This might be because Bangladeshies trust mother care professional. They tend to use less of self-distraction. Moreover, they believed in Allah (God). Islamic philosophy teaches human beings how to face difficulties in life, such as fear, hunger, illness, suffering, the loss of goods and death. Muslims view these problems as a test from God, which should be received with patience and prayers. They consider an illness as an apology for their sins and a way to achieve the best life in the here-after. Desolation, hopelessness, and frustration are sins in Islamic belief because everything that happens on the earth is with God's direction (Mills, 1996).

Factors Related to Coping Strategies Used by Patients with MI

The results from this study revealed that there was no statistical significant difference in coping strategies according to age, residential area, educational level, and duration of illness. However, venting coping strategies was

used differently between male and female patients. Male significantly used venting coping strategies more than female. The findings of this study were consistent with the study conducted by Bhagyalakshmi et al. (2012), which showed that there was no significant difference of coping strategy used according to age, education, occupation, family system and family income.

The results from this study indicated that male patients with MI significantly used more venting, one of emotion-focused coping strategies, than female. There was no reported study that examined the differences between male and female patients with MI in using venting coping strategy. However, a study conducted by Kristofferzon et al. (2003) reported that female patients used more coping strategies after diagnosis of MI than males. In a study by Kristofferzon et al. (2005), women were shown to use more evasive coping than men after diagnosis of illness.

In this study, regarding denial coping strategy, although there was no significant difference of using denial according to gender, female patients with MI tended to use denial coping strategy more than male. Use of denial, one of emotion-focused coping, may be appropriate in a life-threatening situation, such as having heart attack. There was no previous research examined the relationship between denial and gender. However, a study conducted by Kristofferzon et al. (2003) reported that female used more coping strategies after the diagnosis of MI than male.

The results from present study provide basic valuable information regarding coping and factors related to coping strategies of Bangladeshi Patients with MI. These results may also provide information for future research as this research is the first of its kind in this group in Bangladesh. Therefore nurses have the responsibility to conduct programs like health education, stress reduction techniques

and counseling sessions to help the patients with MI overcome stressful events and its

consequences.

CHAPTER 5

CONCLUSION AND RECOMMENDATIONS

A descriptive study was conducted to identify the coping strategies frequently used by patients with MI and to examine the factors related to coping strategies among patients with MI. Eighty-eight patients with MI were recruited from SZMCH. Subjects were interviewed to complete the demographic data and health-related questionnaire and the Brief COPE scale. Data were collected from January to March 2013. The data collected in this study were analyzed by using descriptive statistics and inferential statistics. This chapter presents conclusion of the study results, strengths and limitations, implications and recommendations of the study.

Conclusion

Before collecting data, every subject was asked to sign a written informed consent form or to give verbal consent to ascertain their willingness to be the sample of this study. They were then asked to fill out the demographic and health-related questionnaire followed by the Brief COPE scale. The Brief COPE scale has been tested for its test-retest reliability using 20 subjects prior to the data collection. The result showed that the percentage of agreement ranged from 40% to 70%.

The demographic and health-related characteristics were presented in terms of frequency, percentage, mean, standard deviation, minimum, and maximum.

The study finding revealed the following results. The majority of the subjects had been diagnosed with MI within less than one years ($n = 58$, 65.9%). Most of the patients with MI in this study were male with a mean age of 51 years,

predominantly Islam. The Brief COPE scale measured the coping strategies frequently used by patients with MI. The three most frequently used coping strategies were self-blame, denial, and venting. Whereas, the three least used coping strategies were self-distraction, positive reframing, and behavioral disengagement.

There was no significant difference in coping strategies according to age, residential area, educational level, and duration of illness. Venting coping strategies was used significantly different according to gender. Male significantly used venting coping strategies more than female and female tended to use denial coping subscales than male.

Strengths and Limitations of the study

The strengths of this study are identified. The study was conducted at the tertiary referral medical college hospital, Bogra, in Bangladesh. This study reveals coping strategies used by Bangladeshi patients with MI, and related factors. Results from this study will be useful in Bangladeshi context. However, this study also had limitations. Firstly, the male population was greater than the female. Even though the population of subjects according to gender was consistent with incidence of MI, the majority of male patients might result in different coping strategies if there was proportionate gender. Secondly, this study used purposive sampling to recruit subjects from different setting from OPD, CCU, and medical ward of SZMCH. Different setting might imply severity of patients that might cause different coping strategies. Thirdly, this was a cross-sectional study focused on coping strategies that patients with MI used. The data were collected one time. The results might reflect coping

strategies used in certain time. Future longitudinal study might be useful to examine stability or change of using coping strategies.

Implications and Recommendations

This research study is the first study exploring coping and factors related to coping of patients with MI in Bangladesh. The result of this study can be used as baseline information.

The findings of this study provide evidence for the clinical recommendation that patients with MI use different coping strategies. Most subjects in this study frequently used coping strategies of self-blame, denial, and venting. Nurses and clinical practitioners should include the screening of the patients' psychological and socio-cultural problems, noting that Bangladeshi patients have an Islamic view and use different strategies to cope.

Based on the findings, some recommendations are offered as follows:

1. A qualitative study is recommended to understand in depth information regarding coping strategies used by patients with MI. Moreover, qualitative approach might be useful to discover coping strategies that were not included in the instrument.

2. A longitudinal research design is recommended to examine stability and change of using coping strategies among patients with MI.

3. Future research also needs to consider the gender balance, so that the findings can be generalized to all patients with MI. Further study recruiting a large sample of patients with MI is recommended. Then, the findings can be used as

foundation information to develop appropriate nursing interventions to promote

effective coping for patients with MI in Bangladesh.

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APPENDICES

APPENDIX A

Informed Consent Form

Dear Patients,

I am Mohammed Aniser Rahman, a master's student at Faculty of Nursing, Prince of Songkla University, Hat Yai Thailand. I am also a senior staff nurse at Bogra Mohammed Ali Hospital. I am conducting a research entitled: "Coping and Related Factors Among Patients With Myocardial Infarction in Bangladesh". The objectives of doing this are to help nurses understand how much stress the patients who have been diagnosed of Myocardial Infarction, like you, have. Also it helps understand how you cope with this situation, I also would like to see if your stressful situation will be related to the way you cope or deal with this disease.

In this regards, I would like to invite you to participate in this study by asking you to provide necessary information through answering to the questionnaires that I will give you later. Participation in this study will not have any harm or risk to you or affect the care you will receive from this hospital. The provided data will be only used for research purpose and it will be destroyed after the research report is completed.

All data you provided to me will be kept confidential and your identity will not be disclosed. The information will be only academic for researcher and advisor of my research process. Participates   name and any identifying information will not be used in the report of the study. Participates can with draw from this study at any time without any plenty and hesitation.

Lastly, if you agree to participate in this study, I will provide you a set of questionnaire to answer. You will be asked to sign your name under the given below.

The researcher will give thanks participate for wiliness to participation in the study. Any kind of question and any further information regarding this research will be asked to the researcher in the following address.

Mohammed AniserRahmananiser.rahman.mhb@gmail.com (8801711040662)

Master of Nursing Science (International program)

Prince of Songkla University, Hat Yai, Thailand

………………………….	…………………………...	…………………….
Name of the participant	Signature of the participant	Date
Mohammed Aniser Rahman	…………………………	…………………….
Name of the researcher	Signature of the researcher	Date

APPENDIX B

Instruments

Code………….

Date………….

Demographic Data Assessment and Health Related Questionnaire (DDA &HRQ)

Instruction: I will ask you some information about your personal data and disease related data. Please read each statement and then answer the best choice with putting mark "√" (tick) in the appropriate section. There is no right or wrong answer. If you do not understand or clear about these questions you can ask me.

    1. Age…………….Years…………

    2. Gender   i. [ ] Male   ii. [ ] Female

    3. Marital status   i. [ ] Married   ii. [ ] Unmarried

        iii. [ ] Widowed/Widower

    4. Residential area I. [ ] Rural   ii. [ ] Urban

    5. Educational level

        i. [ ] No formal education ii. [ ] Primary education

        iii. [ ] Higher education

    6. Religion

        i. [ ] Islam   ii.[ ] Hindus

    7. Occupation

        i. [ ] Farmer   ii. [ ] Government employee

        iii. [ ] Private   iv. [ ] Business person

        v. [ ] Retired Person vi. [ ] Other

    8. Income per month (Bangladeshi Taka)

        i. [ ] < 5000   ii. [ ] 5000- 10,000

        iii. [ ] >10,000

APPENDIX B (continued)

9. Duration of illness with MI

                    i. [ ] Less than 1 year ii. [ ] More than 1 year

10. History of smoking   i.[ ] Yes   ii. [ ] No

11. History of alcohol use   i. [ ] Yes   ii. [ ] No

12. History of diabetes   i. [ ] Yes   ii. [ ] No

13. History of hypertension   i. [ ] Yes   ii. [ ] No

14. Family history of MI disease   i. [ ] Yes   ii. [ ] No

If yes give details…………………………………………………

APPENDIX C

Brief COPE Scale

Instruction: please tick (√) mark a number from 1 to 4. Try to answer to each item separately in your mind from each other item. There is no a "right or wrong" answer. Please choose your answers thoughtfully, and make your answers as true FOR YOU as you can. Your answer to show how often you use following ways of cope with experience stressful event or stressful situation regarding to your illness after myocardial infarction.

1= I haven't been doing this at all	2 = I've been doing this a little bit	3 = I've been doing this a medium amount	4 = I've been doing this a lot

No.	Coping Strategies	1	2	3	4
1	I've been turning to work or other activities to take my mind off things.				
2	I've been concentrating my efforts on doing something about the situation I'm in.				
3	I've been saying to myself "this isn't real."				
4	I've been using alcohol or other drugs to make myself feel better.				
5	I've been getting emotional support from others.				
6	I've been giving up trying to deal with it.				
7	I've been taking action to try to make the situation better.				
8	I've been refusing to believe that it has happened.				
9	I've been saying things to let my unpleasant feelings escape.				
10	I've been getting help and advice from other people.				
11	I've been using alcohol or other drugs to help me get through it.				
12	I've been trying to see it in a different light, to make it seem more positive.				
13	I've been criticizing myself.				
14	I've been trying to come up with a strategy about what to do.				

APPENDIX C (continued)

No.	Coping Strategies	1	2	3	4
15	I've been getting comfort and understanding from someone.				
16	I've been giving up the attempt to cope.				
17	I've been looking for something good in what is happening.				
18	I've been making jokes about it.				
19	I've been doing something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping, or shopping.				
20	I've been accepting the reality of the fact that it has happened.				
21	I've been expressing my negative feelings.				
22	I've been trying to find comfort in my religion or spiritual beliefs.				
23	I've been trying to get advice or help from other people about what to do.				
24	I've been learning to live with it.				
25	I've been thinking hard about what steps to take.				
26	I've been blaming myself for things that happened.				
27	I've been praying or meditating.				
28	I've been making fun of the situation.				

APPENDIX D

Skewness and Kurtosis of Study Variables

Skewness and Kurtosis of Study Variables

Items	Skewness	Kurtosis
Self-blame	.082/.257	-.737/.508
Denial	-.194/.257	-.164/.508
Venting	-.127/.257	-.431/.508
Acceptance	-.393/.257	-.475/.508
Religion	-.208/.257	-.013/.508
Humor	.083/.257	-.737/.508
Planning	.026/.257	-.915/.508
Using emotional support	.077/.257	-.434/.508
Using instrumental support	-.233/.257	-.464/.508
Substance use	.170/.257	-.445/.508
Active coping	.077/.257	-.662/.508
Behavioral disengagement	-.053/.257	-.566/.508
Positive reframing	.418/.257	-.776/.508
Self-distract	.360/.257	-.464/.508

APPENDIX E

Brief COPE Percentage of Agreement Score

Brief COPE Percentage of Agreement Score

Subscale	Percentage of agreement
Self-blame	70
Denial	60
Venting	55
Acceptance	55
Religion	50
Humor	45
Planning	45
Using emotional support	40
Using instrumental support	40
Substance use	40
Active coping	40
Behavioral disengagement	40
Positive reframing	40
Self-distract	40

APPENDIX F

Percentage and Frequency of Each Brief COPE Scale

Percentage and Frequency of Each Brief COPE Scale Regarding Patients With MI (N = 88)

No.	Coping Strategies	1= I haven't been doing this at all	2 = I've been doing this a little bit	3 = I've been doing this a medium amount	4 = I've been doing this a lot
1	I've been turning to work or other activities to take my mind off things.	44(50.0)	11(12.5)	9(10.2)	24(27)
2	I've been concentrating my efforts on doing something about the situation I'm in.	10(11.4)	57(64.80	32(36.4)	20(22.7)
3	I've been saying to myself "this isn't real."	19(21.60	17(19.3)	32(36.4)	20(22.7)
4	I've been using alcohol or other drugs to make myself feel better.	19(21.6)	17(19.3)	32(36.40	20(22.7)
5	I've been getting emotional support from others.	20(22.7)	15(17.0)	26(29.5)	27(30.7)
6	I've been giving up trying to deal with it.	16(18.2)	26(29.5)	33(37.5)	13(14.8)
7	I've been taking action to try to make the situation better.	15(17.0)	23(26.1)	33(37.5)	17(19.3)
8	I've been refusing to believe that it has happened.	17(19.3)	22(25.0)	32(36.4)	17(19.3)
9	I've been saying things to let my unpleasant feelings escape.	16(18.2)	26(29.5)	25(28.4)	21(23.9)
10	I've been getting help and advice from other people.	20(22.7)	25(28.4)	31(35.20)	12(13.6)
11	I've been using alcohol or other drugs to help me get through it.	18(20.5)	28(31.8)	31(35.2)	11(12.5)
12	I've been trying to see it in a different light, to make it seem more positive.	20(22.7)	27(30.7)	31(35.20)	10(11.4)
13	I've been criticizing myself.	20(22.7)	21(23.9)	22(25.0)	25(28.40)

APPENDIX F (continued)

No.	Coping Strategies	1	2	3	4
14	I've been trying to come up with a strategy about what to do.	40(45.5)	10(11.4)	12(13.6)	26(29.5)
15	I've been getting comfort and understanding from someone.	21(23.9)	36(40.9)	28(31.8)	3(3.8)
16	I've been giving up the attempt to cope.	23(26.1)	27(30.7)	31(35.2)	7(8.0)
17	I've been looking for something good in what is happening.	24(27.3)	30(34.1)	21(23.9)	13(14.8)
18	I've been making jokes about it.	14(15.9)	26(29.5)	30(34.1)	18(20.5)
19	I've been doing something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping, or shopping.	20(22.7)	25(28.4)	28(31.8)	15(17.0)
20	I've been accepting the reality of the fact that it has happened.	18(20.5)	22(25.0)	33(37.5)	15(17.0)
21	I've been expressing my negative feelings.	13(14.8)	31(35.2)	32(36.4)	12(13.6)
22	I've been trying to find comfort in my religion or spiritual beliefs.	20(22.7)	22(25.0)	24(27.3)	22(25.0)
23	I've been trying to get advice or help from other people about what to do.	19(21.6)	24(27.3)	31(35.2)	14(15.9)
24	I've been learning to live with it.	17(19.3)	23(26.1)	34(38.6)	14(15.9)
25	I've been thinking hard about what steps to take.	11(12.5)	35(39.8)	24(27.3)	18(20.5)
26	I've been blaming myself for things that happened.	15(17.0)	26(29.5)	29(33.0)	18(20.5)
27	I've been praying or meditating.	20(22.7)	22(25.0)	27(30.7)	19(21.6)
28	I've been making fun of the situation.	21(23.9)	22(25.0)	29(33.0)	16(18.2)

APPENDIX G

List of Translators

Three persons worked on the translation of the instrument: Brief COPE Scale. They are as follows:

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List of Publication and Proceeding

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