CHARTER 1

INTRODUCTION

Background and significance of research problems

In recent years, the morbidity of coronary artery disease (CAD) has increased due to the development of living standards. Myocardial infarction (MI) is a kind of CAD. According to the American Heart Association, nearly 59 million American people (about one fourth) have cardiovascular disease and about 1.5 million people suffered from MI annually (American Heart Association, 1994 cited in Hudak, Gallo, & Morton, 1998). The mortality rate of MI also tended to increase in the United States. In 1988, the mortality (per 100,000) was 68.5 in men and 30.9 in women. In 1992, the mortality rate (per 100,000) was 130 in men and 102 in women (WHO, 1994).

In China, the morbidity of MI per 100,000 had increased from 18.2 in 1990 to 21.8 in 1994 (China Health Statistic Bureau, 1995 cited in Wang, 1996). Moreover, death from myocardial infarction was about 24.94% among death from coronary heart disease in 1994 (Chen, 1994).

Myocardial infarction is a life-threatening heart disease characterized by the formation of localized necrotic areas within the myocardium. When blood flowing through the coronary arteries is partially or completely blocked,

ischemia and necrosis of the myocardium may result (Abraham, 1995). Myocardial infarction can be diagnosed by typical clinical manifestations such as chest pain, cardiac enzymes change, and dynamic changes in electrocardiography (ECG). Major complications of MI are dysrhythmias, cardiogenic shock, congestive heart failure, pulmonary embolism, and recurrent MI (Hudak, Gallo, & Morton, 1998).

More than one half of MI patients experience significant physical, psychological and social disabilities (Haitt & Henshell-Nelson, 1990). Because most of MI patients were afraid of death and worried about recurrent MI, they deliberately reduced their physical activity. The reduced activity automatically led to physical restriction, and produced more fatigue and further anxiety. Patients often become trapped in a downward spiral of increasing disability (Bramoweth, 1983). The psychological and social consequences of MI may be more debilitating than the common physical consequences to patients (Bramoweth, 1983). Because MI patients initially faced the possibility of death, they reacted with fear, disbelief, anxiety and denial. Patients expressed a lack of confidence, a loss of motivation and over-concern for their physical conditions. Some patients lacked the ability to cope with their actual situation (Bramoweth, 1983). In addition, role performance was also restrictive in MI patients. Patients changed the decision-making patterns and the balance of power. Some patients failed to return to work because of anxiety and depression (Broome & Llewelyn, 1995).

In summary, myocardial infarction patients were faced with many physical, psychological and social consequences during the recovery process. All of these MI consequences influenced the patients' recovery and disease control. Since to control the disease, and to prevent recurrent MI, patients needed to be well to the disease. They had to perform health behaviors specific to MI. Disease control or symptom control and prevention of recurrence were needed. In order to control the disease, MI patients needed to perform health behaviors including follow-up visiting, taking medication as prescribed, and checking pulse, abnormal signs and symptoms. Follow-up visiting and taking medication as prescribed were beneficial for MI patients to effectively limit infarction size and progression of ischemic to damaged myocardium effectively, and prevented complications. Checking pulse, abnormal signs and symptoms can enable MI patients to detect warning signs and symptoms and seek for medical professional help as soon as possible. Additionally, in order to prevent recurrent MI, patients should perform health behaviors including exercising, modifying nutrition, limiting smoking and managing stress. Exercise can produce a 20% increase in maximal work capacity with a beneficial effect on metabolic and circulatory demands, and improve MI patients' confidence in the ability to adjust physically, psychologically and socially. So, it is important for MI patients to adhere to exercising (Broome & Llewelyn, 1995).

Furthermore, the MI patients should have a diet with low fat, cholesterol, and sodium. Low-density lipoproteins (LDL) are the major carriers of cholesterol (Ruppert, Kernicki, & Dolan, 1996). When too many LDL particles exist in the plasma, cholesterol can be deposited in artery walls. This process of atherosclerosis can result in clogging arteries and re-infarction (Brannon & Feist, 1997).

Smoking is also a most important risk factor for MI. The MI patients need to quit smoking or avoid secondary smoking. Nicotine acutely increases catecholamine levels, heart rate and blood pressure, and leads to vasoconstriction of the coronary arteries. In addition, MI patients should adjust psychological status and change unhealthy lifestyles. Stress can increase the level of catecholamines, heart rate, blood pressure, and the platelet aggregation that is incorporated into an arterial plaque (Ruppert, Kernicki, & Dolan, 1996). Catecholamines increase the risk of life-threatening dysrhythmias and sudden cardiac death for MI patients (Dunn & Lowther, 1991).

According to Bandura (1977), behaviors are influenced by person's self-efficacy. People with high self-efficacy are more likely to acquire or maintain protective health behaviors, and recover better and more rapidly from illness than people with low self-efficacy (Grembowski, Patrick, Diehr, Durham, Beresford, Kay, & Hecht, 1993). It has also been evidenced that self-efficacy is one of the factors influencing health behaviors (Hickey, Owen, & Froman, 1992).

Bandura's self-efficacy theory is derived from social learning theory. There are two types of expectations influencing behaviors: efficacy expectations and outcome expectations. An efficacy expectation, or "perceived self-efficacy", is defined as an individual's conviction that he/she can successfully perform the behavior required to produce the outcomes. Outcome expectations refer to the individual's belief that these specific behaviors will produce specific outcomes, such as reducing symptoms or decreasing the frequency of exacerbation (Bandura, 1977). Although individuals may have the knowledge and skills necessary to complete a given behavior, they may not do so if they lack confidence in having the amount of time and effort expended to complete a task. Research has shown that self-efficacy is related to whether the person will attempt to perform a task and to how long he/she will persevere (Bartholomew, Parcel, Swank, & Czyzewski, 1993). In this study, self-efficacy refers to the conviction that myocardial infarction patients can successfully perform the health behaviors they believe result in controlling the disease and preventing recurrent MI.

The findings from Perkins's study (1991) provided the evidence that patients' self-efficacy was predictively and concurrently related to their engaging in behaviors designed to enhance cardiac recovery (cited in Jensen, Banwart, Venhaus, Popkess-Vawter, & Perkins, 1993). Schere and Shimme (1996) stated that self-efficacy was a predictor of both short-term and long-term success in maintaining

health-related behaviors, such as quitting smoking, controlling body weight, using contraceptives, exercising exercise, and controlling alcohol consumption.

Nursing is concerned with helping individuals to understand, perform and maintain health behaviors (Fleury, 1992). The nursing role with MI patients should not only be as a provider of direct treatment but to act as a facilitator and supporter of effective health behaviors performed by patients. Since those with high self-efficacy are more likely to initiate, maintain and persist in performing health behaviors, to promote health behaviors, self-efficacy needs to be enhanced. At the moment, however, literature on self-efficacy and health behaviors among MI patients in China have not been found. Therefore, there is a need to describe self-efficacy and health behaviors among MI patients who are discharged from the hospital and to examine the relationship between these two variables. The findings of this study will benefit nursing practice, nursing education, and nursing research.

Ganquan Hospital is a government-operated university teaching hospital under the Ministry of Public Health. The number of MI outpatients attending the Cardiac Outpatient Clinic has increased. According to the record of this hospital from January to December 1998, 21.82% of cardiac outpatients were myocardial infarction patients (Annual record of Ganquan Hospital, 1999).

Objectives of the study

There were three research objectives for this study:

1. To describe the levels of self-efficacy among myocardial infarction patients.

2. To describe the levels of health behaviors among myocardial infarction patients.

3. To examine the relationship between self-efficacy and health behaviors among myocardial infarction patients.

Hypothesis

There was a positive relationship between self-efficacy and health behaviors among myocardial infarction patients.

Scope of the study

This study was conducted with 60 MI patients at the Cardiac Outpatient Department in Ganquan Hospital in Shanghai, People's Republic of China, during November, 1999 to January, 2000.

Assumption

For this study, the MI patients know that if they perform health behaviors, they will receive the benefit.

Definition of terms:

Myocardial infarction patient	referred to a person diagnosed by a physician as having post myocardial infarction attending the Cardiac Outpatient Department of Ganquan Hospital.
Health behaviors	Referred to the actions performed as reported by myocardial infarction patients with regard to follow-up visiting, taking medication as prescribed, checking their pulse and abnormal signs and symptoms to control the disease, and exercising, modifying nutrition, limiting smoking, and managing stress to prevent recurrent MI. They were measured by the Myocardial Infarction Health Behavior Scale developed by the researcher based on the self-efficacy theory of Bandura and the literature review.
Self-efficacy	referred to the conviction that MI patients can successfully perform the health behaviors they believe result in controlling the disease and preventing the recurrence of MI. This

was measured by the Myocardial Infarction Self-efficacy Scale developed by the researcher based on the self-efficacy theory of Bandura.