CHAPTER 3

METHODOLOGY

Design of the study

A descriptive correlational design was used to describe self-efficacy and health behaviors, and to examine the relationship between self-efficacy and health behaviors among myocardial infarction patients.

Population and sample

The accessible population of this study was myocardial infarction patients attending the Cardiac Outpatient Department of Ganquan Hospital in Shanghai, P. R. China. The sample size for this study was determined by power analysis. Effect size (γ) refers to the strength of correlation between self-efficacy and health behaviors. Perkins and Jenkins (1998) found that self-efficacy expectations were significantly and positively related to behavior performance for selected cardiac recovery behaviors among percutaneous transluminal coronary angioplasty (PTCA) patients with the correlation value ranging from 0.26 to 0.85. The results of the study of Charoenwongwiwat (1995) revealed the significant positive correlation between self-efficacy and self-care behavior among myocardial infarction patients was .76. According to the review of the previous

research studies related to self-efficacy and health behaviors among heart disease patients, the effect size of this study was estimated at the moderate level of .50. When the level of significance (α) is set at .05, power at .80, and effect size at .50, the sample size is 32 (Polit & Hungler, 1999 p. 494). However, the sample size of this study was increased to 60.

From November 1999 to January 2000, the purposive sampling method was used to select subjects based on the following eligible criteria:

1. Being able to communicate well in Chinese.

2. Being diagnosed with myocardial infarction without physical limitations and other chronic diseases such as stroke, diabetes mellitus.

3. Being over 40 years old.

4. Being willing to participate in this study

Setting

The setting for this study was the Cardiac Outpatient Department of Ganquan Hospital in Shanghai, People Republic of China. The hospital is a government-operated university teaching hospital under the Ministry of Public Health.

Instrumentation

The instruments used in this study included a Demographic Data Recording Form, Myocardial Infarction Self-efficacy Scale (MI-SES), and Myocardial Infarction Health Behaviors Scale (MI-HBS).

Demographic Data Recording Form

The Demographic Data Recording Form was designed to collect the subjects' information including age, gender, marital status, years of education completed, occupational status before retirement, average family monthly income, times of hospitalization for myocardial infarction, location of myocardial infarction, and duration of myocardial infarction.

Myocardial Infarction Self-efficacy Scale (MI-SES)

The researcher developed the MI-SES based on the literature review. There were 35 items in the scale. The scale measured the degree of confidence of the ability of the subjects to successfully perform tasks in the areas of follow-up visiting, taking medication as prescribed, and checking their pulse, abnormal signs and symptoms to control their disease, and exercising, modifying nutrition, limiting smoking, and managing stress to prevent recurrent MI.

Scoring of MI-SES: Each item is rated on a 4-point rating scale of degree of confidence (3 = very confident, 2 = somewhat confident, 1 = not at all confident, 0= not applicable). The possible range of overall score was 35 to 105. The number of items of each sub-scale was: self-efficacy for follow-up visiting   (2 items), self-efficacy

for taking medication as prescribed (2 items), self-efficacy for checking pulse, abnormal signs and symptoms (2 items), self-efficacy for exercising (9 items), self-efficacy for modifying nutrition (11 items), self-efficacy for limiting smoking (1 items), and self-efficacy for managing stress (8 items). The score was categorized into three levels. The interval value is 23. A low level of self-efficacy is considered as a score range from 35 to 58. A moderate level of self-efficacy is considered as a score range from 59 to 82. A high level of self-efficacy is considered as a score range from 83 to 105.

Myocardial Infarction Health Behaviors Scale (MI-HBS)

The researcher developed MI-HBS based on the literature review. There were 35 items in the scale. The items in MI-HBS were the same as those in MI-SES. The scale measured the frequency of performance of follow-up visiting, taking medication as prescribed, and checking pulse, abnormal signs and symptoms to control disease, and exercising, modifying nutrition, limiting smoking, and managing stress to prevent recurrent MI.

Scoring of MI-HBS: Each item is rated on a 4-point rating scale of frequency of the performance (3 = always, 2 = sometimes, 1= not at all, 0= not applicable). The possible range of score is 35 to 105. The number of items of each sub-scales was: follow-up visiting (2 items), taking medication as prescribed (2 items), checking pulse, abnormal signs and symptoms (2 items), exercising (9 items),

modifying nutrition (11 items), limiting smoking (1 items), and managing stress (8 items). The score was categorized into three levels. The interval value is 23. Low frequency of health behaviors is considered as a score range from 35 to 58. Moderate frequency of health behaviors is considered as a score range from 59 to 82. High frequency of health behaviors is considered as a score range from 83 to 105.

Test of validity and reliability of MI-SES and MI-HBS

A test of the content validity in the English versions and reliability in the Chinese versions of the instruments was conducted before data collection. A panel of experts tested the content validity of MI -SES and MI-HBS. The content validity index (CVI) was tested across the experts' ratings of each item's relevance. A CVI score of .80 or better is generally considered to be a good content validity (Polit & Hungler, 1999, p. 419). The English version was tested by five experts in the area of self-efficacy theory and myocardial infarction from the Faculty of Nursing and from the Faculty of Medicine, Chiang Mai University. Their suggestions were incorporated. An Index of Content Validity was calculated using the formula (Davis, 1992). The CVI scores were .79 for MI-SES, and .90 for MI-HBS. The instruments were translated into Chinese using back-translation technique. The investigator translated the English version into Chinese. The Chinese version was translated into English by a professor of Faculty of Nursing of Shanghai Medical University who is a

bilingual expert. The investigator and translator clarified the discrepancies between the two English versions. Also, the Chinese version was reviewed for its face validity by two Chinese nurses who are experts in medical nursing.

The reliability of MI - SES and MI-HBS was tested with 15 MI patients who met the inclusion criteria and followed up visiting in the Cardiac Outpatient Department of Ganquan Hospital in Shanghai. Reliability coefficients above .70 are considered satisfactory (Polit & Hungler, 1999, p.415). The internal consistency was examined and resulted in Cronbach's alpha .74 for MI - SES, and .76 for MI-HBS. The stability was examined by the test-retest method with a 2- week time interval and resulted in a coefficient of .89 for MI - SES (p < .001) , and .86 for MI-HBS (p < .001).

Protection of human rights

To assure the protection of human rights of the subjects, a consent form was given to the subjects before data collection. Confidentiality, anonymity and the purpose of the research were explained to the subjects. Subjects were free to take part in or withdraw from the study at any time before completion of this study. Each subject's written consent was obtained prior to the study. Information provided by the subjects was used only for the purpose of the study and remained confidential. Data were secured during the study.

Data collecting procedure

Data were collected by individual interviews. The following steps were performed.

1. The investigator received permission to conduct the study from the Faculty of Nursing of Shanghai Medical University, and from Hospital directors and the head nurses in Ganquan Hospital.

2. The investigator contacted the subjects in the Cardiac Outpatient Department, informed them of the purpose of the study, and invited them to participate. Then the investigator gave the subject a cover letter and a subject consent form. The cover letter explained the nature of study, method for ensuring confidentially and assurance that participation was voluntary.

3. The investigator collected the written consent form. Anonymity was guaranteed. Human rights were fully protected. The investigator recruited 60 subjects from the Cardiac Outpatient Department of Ganquan Hospital in Shanghai, People's Republic of China. Interviews were conducted with subjects to measure self-efficacy and health behaviors. Hospital records were reviewed for documentation of a confirmed MI.

4. The investigator reviewed all the data for completeness, which were then prepared for data analysis.

Analysis of data

All data were analyzed by using the statistical package for social science (SPSS) for windows 7.5. Both

descriptive and inferential statistics were used for data analysis. The analysis was divided into four parts.

1. Demographic data were analyzed by using frequency, percentage, range of score, mean, and standard deviation.

2. Scores of self-efficacy and health behaviors were analyzed by using frequency, percentage, range of score, mean, and standard deviation.

3. Pearson's product moment correlation analysis was used to examine the relationship between self-efficacy and health behaviors in the total score.

4. Kendall's nonparametric correlation was performed to examine the relationships between each health behavior and corresponding self-efficacy.

According to Munro (1997, p. 235), the correlation coefficient value (r) .00 - .25 is considered as a little relationship, r value .26 - .49 is considered as a low relationship, r value .50 - .69 is considered as a moderate relationship, r value .70 - .89 is considered as a high relationship, r value .90 - 1.00 is considered as a very high relationship. The significant level was set at the minimum of .05.