CHAPTER 4

FINDINGS AND DISCUSSION

A descriptive correlational study was conducted to describe the level of self-efficacy, the level of health behaviors, and to examine the relationship between self-efficacy and health behaviors among myocardial infarction patients attending the Cardiac Outpatient Department of Ganquan Hospital in Shanghai, People's Republic of China.

Findings

According to the eligible criteria, sixty myocardial infarction outpatients were recruited by purposive sampling during November 1999 to January 2000 in this study. Descriptive statistical analysis for sixty subjects was performed in terms of frequency, percentage, range of score, mean, and standard deviation. After testing the normal distribution, Pearson's product moment was performed to examine the relationship between self-efficacy and health behaviors in the total score. Kendall's nonparametric correlation was performed to examine the relationships between each health behavior and corresponding self-efficacy because they were distributed normally. The findings from this study were presented in the following four parts:

Part I Demographic data of the subjects;

Part II Self-efficacy among the subjects;

Part III Health behaviors among the subjects;

Part IV Relationship between self-efficacy and health behaviors among the subjects.

Part I Demographic data of the subjects

The subjects of this study consisted of 60 myocardial infarction patients following up the Cardiac Outpatient Department. The detailed demographic characteristics of age, gender, marital status, years of education completed, occupation prior to retirement, average family monthly income, times of hospitalization for myocardial infarction, location and duration of myocardial infarction were separately described in table 1.

Table 1

Demographic characteristics of the subjects (N = 60)

Characteristics	Frequency	Percentage(%)
Gender		
Male	41	68.33
Female	19	31.67
Age (years)		
≤ 54	1	1.67
55-59	4	6.66
60-64	11	18.33
65-69	19	31.67
70-74	21	35.00
>74	4	6.37
Mean 67.48 S.D.4.91 Range 53 to 75		
Marital status		
Married	49	81.67
Widow	11	18.33
Years of education completed		
≤ 6	16	26.67
7 - 9	20	33.33
10 - 12	12	20.00
> 12	12	20.00
Mean 8.53 S.D. 3.49 Range 4 to 14		
Occupational status before retirement		
Teacher	4	6.66
Office staff	6	10.00
Business	3	5.00
Health personnel	1	1.67
Technicians	19	31.67
Worker	26	43.33
Unemployed(house keeper)	1	1.67

Table 1

Demographic characteristics of the subjects (N = 60) (cont'd)

Characteristics	Frequency	Percentage(%)
Average family income (yuan/month)		
250 - 500	9	15.00
501 - 750	29	48.33
751 - 1000	13	21.67
1001 - 1250	5	8.33
1251 - 1500	3	5.00
> 1500	1	1.67
Times of hospitalization		
One	43	71.67
Two	14	23.33
Three	3	5.00
Location of myocardial infarction		
Anterior wall	27	45.00
Inferior wall	23	38.33
Lateral wall	1	1.67
Posterior wall	1	1.67
Mixed	8	13.33
Duration of myocardial infarction (months)		
≤ 12	24	40.00
13 - 24	23	38.33
25 - 36	10	16.67
37 - 48	3	5.00

Mean 17.88 S.D. 10.15 Range 5 to 43

Table 1 showed that 41 subjects (68.33%) were male and 19 subjects (31.67%) were female. In the sixty subjects, ages ranged from 53 to 75 with a mean of 67.48 (S.D. = 4.91)

years. Most subjects (85%) age ranged from 60 to 74 years. Forty-nine subjects (81.67%) were married, and only 11 subjects (18.33%) were widows. Twenty subjects (33.33%) had seven to nine years education, and twelve subjects (20%) had more than twelve years education, and sixteen subjects (26.67%) had less than six years education. The mean length of education of the subjects was 8.53 years. Twenty-six subjects (43.33%) were workers before retirement, and only one subject (1.67%) was unemployed. Twenty-nine subjects (48.33%) reported that their average family income were between 501 to 750 yuan per month, and only one subject (1.67%) had more than 1500 yuan per month. Forty-three subjects (71.67%) experienced diagnosed MI for the first time, and only three subjects (5%) experienced three times of hospitalization for myocardial infarction. Twenty-seven subjects (45%) suffered from anterior wall myocardial infarction, and only one subject (1.67%) suffered from lateral or posterior wall myocardial infarction. Forty-seven subjects (78.33%) were diagnosed with myocardial infarction for 5 to 24 months, and only three subjects (5%) were diagnosed with myocardial infarction for 37 to 43 months.

Part II Self-efficacy among the subjects

To describe self-efficacy among myocardial infarction patients, the scores of self-efficacy were obtained from the subjects' response by using a developed MI self-efficacy scale. The findings are shown in table 2-3.

Table 2

Frequency and percentage for the level of self-efficacy (N = 60)

Level	Frequency	Percentage (%)
Moderate	3	5
High	57	95

Table 2 indicated that most subjects (95%) perceived a high level of self-efficacy, and only three subjects (5%) perceived a moderate level.

Table 3

Range of score, mean, and standard deviation of self-efficacy (N = 60)

Self-efficacy	Range of score	Mean	SD
Follow-up visiting	5 - 6	5.95	.22
Taking medication as prescribed	5 - 6	5.92	.28
Checking pulse, abnormal signs and symptoms	3 - 6	4.93	.84
Exercising	19 - 27	23.98	2.10
Modifying nutrition	23 - 33	27.73	2.19
Limiting smoking	1 - 3	2.80	.44
Managing stress	16 - 22	19.70	1.45
Total self-efficacy	78 - 102	91.02	5.41

Table 3 indicated that the total scores of self-efficacy ranged from 78 to 102. The mean value was 91.02, and standard deviation was 5.41. The mean scores of self-efficacy of follow-up visiting, taking medication as prescribed, and limiting smoking were 5.95, 5.92, and 2.80 (SD = .22, .28, .44) respectively. Those mean scores were close to their relevant maximal value. The score of self-efficacy of modifying nutrition ranged form 23-33 with a

mean score of 27.73 (SD = 2.19). It is a lower mean score compared with its maximal value. The score of self-efficacy of exercising ranged from 19 to 27 with a mean score of 23.98 (SD = 2.10).

Part III Health behaviors among the subjects

To describe the health behaviors among myocardial infarction patients, the scores of health behaviors were obtained from the subjects' response by using developed a MI health behavior scale. The findings were shown in table 4-5.

Table 4

Frequency and percentage for the level of health behaviors (N = 60)

Level	Frequency	Percentage (%)
Moderate	28	46.67
High	32	53.33

Table 4 indicated that more than half of the subjects (53.33%) perceived a high level, and 46.67% of subjects rated a moderate level of health behaviors.

Table 5

Range of score, mean, standard deviation of health behaviors (N = 60)

Health behaviors	Range of score	Mean	SD
Follow-up visiting	5 - 6	5.77	.43
Taking medication as prescribed	5 - 6	5.52	.50
Checking pulse, abnormal signs and symptoms	2 - 6	3.93	1.04
Exercising	18 - 26	21.68	1.98
Modifying nutrition	18 - 30	24.62	2.56
Limiting smoking	1 - 3	2.70	.59
Managing stress	14 - 22	18.62	1.70
Total health behaviors	73 - 93	82.85	4.67

Table 5 indicated that the total scores of health behaviors ranged from 73 to 93. The mean value was 82.85, and standard deviation was 4.67. The mean score of health behaviors of follow-up visiting, taking medication as prescribed, and limiting smoking were 5.77, 5.52, and 2.70 (SD = .43, .50, .59) respectively. Those mean scores were close to their relevant maximal value. The score of health behaviors of modifying nutrition ranged form 18-30 with a mean score of 24.62 (SD = 2.56). It is a lower mean score

compared with its maximal value. The score of self-efficacy of exercising ranged from 18 to 26 with a mean score of 21.68 (SD = 1.98).

Part IV Relationship between self-efficacy and health behaviors among the subjects

After testing the normal distribution, the total scores of self-efficacy and health behaviors had a normal distribution, but the scores of each health behavior and corresponding self-efficacy did not have a normal distribution (Table 7, Figure 2, in Appendix J). By means of the Pearson's product moment correlation coefficient, the relationship between self-efficacy and health behavior in the total score was examined. The relationships between each health behavior and corresponding self-efficacy were examined by Kendall's nonparametric correlation. The results are shown in table 6.

Table 6

Relationships between self-efficacy and health behaviors among the subjects (N = 60)

Self-efficacy & Health behaviors	Correlation Coefficient Value (r)	level
Follow-up visiting	.42**	Low
Taking medication as prescribed	.31*	Low
Checking pulse, abnormal signs and symptoms	.40**	Low
Exercising	.55**	Moderate
Modifying nutrition	.52**	Moderate
Limiting smoking	.86**	High
Managing stress	.44**	Low
Overall scores	.68**	Moderate

*P < .05, ** P < .01

Table 6 showed a significant, positive moderate correlation of .68 ($p < .01$) between self-efficacy and overall health behaviors scores. It suggested that the higher the subjects perceived self-efficacy, the more frequency of health behaviors they performed. Additionally, significant positive relationships were found between each health behavior and corresponding self-efficacy (follow-up visiting $r = .42$, $p < .01$, at a low level; taking medication as prescribed $r = .31$, $p < .05$, at a low level;

checking pulse, abnormal signs and symptoms $r = .40$, $p < .01$, at a low level; exercising $r = .55$ $p < .01$, at a moderate level; modifying nutrition $r = .52$, $p < .01$, at a moderate level; limiting smoking $r = .86$, $p < .01$, at a high level; managing stress $r = .44$, $p < .01$, at a low level, respectively).

Discussion

The discussion of this study was organized into four parts according to the study objectives.

Part I Demographic characteristics of the subjects

Sixty myocardial infarction patients participated in this study. The average age of the subjects was 67.48 (S.D. = 4.91) years. The majority of the subjects (85%) were in the age range of 60 to 74 years. Among these subjects, nearly two thirds (68.33%) were male, and 31.67% were female (Table 1). These demographic characteristics were congruent with the incidence trend of myocardial infarction. Although 50% of all MI occurs in people under the age of 65, 80% of people who die of MI aged 65 years or older (American Heart Association, 1994 cited in Hudak, Gallo, & Morton, 1998). About gender, men have a greater risk of developing coronary artery disease than women at earlier ages (American Heart Association, 1994 cited in Hudak, Gallo, & Morton, 1998). This obvious difference diminishes after menopause. However, even after age 65, women continue to be less likely than men to develop

coronary artery disease (Stokes, 1990 cited in Black & Matassarin-Jacobs, 1993).

The mean length of education of the subjects was 8.53 years (Table 1), which was slightly lower than that of the general population in China. There has been at least nine years of formal education for the average Chinese population for more than twenty years. However, the subjects in this study received less education before the liberation period, possibly because of poverty. Twenty-six subjects (43.33%) were workers before retirement.

Twenty-nine subjects (48.33%) reported that their average family income was between 501 to 750 yuan per month (Table 1). This average income is a little more than that of the average living standard in China. All subjects were retired people. According to the national policy, older people who are retired can get basic financial aid from the government.

Forty-three subjects (71.67%) were diagnosed for the first time with myocardial infarction. For the duration of myocardial infarction, the percentages of the subjects became less in this study as time went on. Forty percent of the subjects experienced MI for 5 to 12 months, 38.33% and 16.67% from between 13 to 24 months and 25 to 36 months, and only 5% of the subjects from 37 to 43 months (Table 1). This can be explained in that long - term survivors become less with time because myocardial infarction is a life-threatening heart disease, and the death rate from myocardial infarction is 24.94% among the death rate from

coronary heart disease in China (Chen, 1994).

Part II Self-efficacy among the subjects

The result of the study indicated that the subjects perceived their self-efficacy at a high level with a mean score of 91.02, and standard deviation of 5.41 (Table 3), in which most of the subjects (95%) perceived their self efficacy at a high level and 5% of subjects rated it at a moderate level (Table 2). The result can be explained by the characteristics of the demographic variables. Twenty four subjects (40%) had more than ten years of education. Before retirement, twenty subjects (43.33%) were workers, nineteen subjects (31.67%) were technicians, and only one subject (1.67%) was unemployed. Twenty-nine subjects (48.33%) reported that their average family income was between 501 to 750 yuan per month (Table 1). The socioeconomic status of the subjects was slightly higher than that of the average older population in China. In the research on self-efficacy and health behaviors among older adults, Grembowski and colleagues (1993) found that positive association exists between self-efficacy and socioeconomic status, the latter of which consists of three variables, annual family income, years of education, and occupational status before retirement. Individuals with high socioeconomic status scores reported higher efficacy and better health behaviors. Gecas (1989) also reported that education influences individuals' beliefs in their abilities, and higher education levels would predict higher levels of self-

efficacy.

The study variables which had mean scores closes to their relevant maximal value in the first three orders were: self-efficacy for follow-up visiting, self-efficacy for taking medication as prescribed, and self-efficacy for limiting smoking. Whereas, self-efficacy for modifying nutrition had a lower mean score compared with its maximal value (table 3). This finding was consistent with Bandura's (1977) view that individuals may have different levels of self-efficacy for different types of behaviors. In this study, MI patients perceived a high conviction that they could successfully perform health behaviors to control their disease and prevent recurrent MI, especially in the areas of follow-up visiting, taking medication as prescribed, and limiting smoking.

According to Bandura (1977), magnitude is one of three dimensions varying individual's self-efficacy. Magnitude refers to the complexity of the tasks that people believe they can accomplish. Taking medication probably is easier (that is less time consuming and less difficult) than exercise, altering diet, managing stress, and limiting smoking (Conn, Taylor, & Casey, 1992). Thus MI patients percieved a high level of self-efficacy for taking medication. However, modification of nutrition is often difficult to achieve because dietary behaviors are usually complex and traditional patterns in one's life. Thus the complexity of modifying nutrition could influence the level of perceived self-efficacy. In this study, nearly two

thirds of the subjects (68.33%) were male, and 31.67% of the subjects were female (Table 1). In China, women usually cook for their family members. The male subjects usually do not cook for themselves. So male subjects perceived a lower mean score of self-efficacy for modifying nutrition.

In addition, Bandura (1977) stated that self-efficacy expectations are derived from four sources: performance accomplishment, vicarious experience, verbal persuasion, and emotional and physical arousal. Successful mastery of a task tends to increase perceived self-efficacy. In this study, as MI patients mastered taking medication as prescribed, patients should have follow-up visiting to maintain the treatment. They were encouraged to pursue follow-up visiting, and this resulted in further success their perceptions of self-efficacy for accomplishing more difficult behaviors (such as limiting smoking) were increased. Additionally, many tapes, books, and pamphlets about limiting smoking were provided. Observations of peer's successfully limiting their smoking enhanced the patients' expectation about their own mastery. It can be explained that performance attainment and vicarious experience might enhance self-efficacy for limiting smoking. These findings were also supported by Charoenwongwiwat's (1995) research results that self-efficacy for giving up smoking and taking medication as prescribed had high mean scores, but self-efficacy for consuming appropriate diet had a low mean score.

Part III Health behaviors of the subjects

The results showed that the subjects rated their health behaviors at a nearly high level with a mean score of 82.85, and standard deviation of 4.67 (Table 6). More than half of the subjects (53.33%) reported their health behaviors at high levels, and 46.67% of subjects rated them at a moderate level (Table 5). The results can be explained in terms of the duration of MI. In this study, twenty-four subjects (40%) experienced myocardial infarction for 5 to 12 months, and twenty-three subjects (38.33%) experienced myocardial infarction for 13 to 24 months, and only 5.0% of the subjects experienced myocardial infarction for 37 to 43 months (Table 1). As Miller and colleagues (1990) found, performance of health behaviors usually declined dramatically during the first year after MI, with a smaller decline in performance after one year. In addition, Andrew and colleagues (1981) stated that tangible spouse support has been found to predict personal psychological and social adjustments after myocardial infarction. Lack of spouse support was the most frequent reason given for dropping out of an exercise program after myocardial infarction (cited in Miller, McMahon, Ringel, Siniscalchi, & Welsh, 1989). In this study, forty-nine subjects (81.67%) were married, and only 11 subjects (18.33%) were widows. So tangible spouse support of the subjects might enhance their performing health behaviors.

In this study, health behaviors include follow-up visiting, taking medication as prescribed, checking their

pulse, abnormal signs and symptoms, exercising, modifying nutrition, limiting smoking, and managing stress. The study variables with mean scores close to their relevant maximal value in the first three orders were: follow -up visiting, taking medication as prescribed, and limiting smoking. However, modifying nutrition had a lower mean score compared with its maximal value (Table 6). This indicated that the subjects reported a high frequency of performance of follow-up visiting, taking medication as prescribed and limiting smoking. These results can be explained as follows.

In China, physicians and nurses in cardiac clinics were normally specialized in that area and had been working for a long time. They were very familiar with their patients. It was easy to establish friendly relationships with their patients. A good relationship could make the patients understand their disease and treatment, and thus adhere more to follow-up visiting, and perform health behaviors. Additionally, in this study, the mean length of education of the subjects was 8.53 years, and 40% of the subjects had more than ten years of education. This educational status of the subjects was slightly higher than that of the average older population in China. The educational status could cause the patients to receive more knowledge about heart disease and relevant health behaviors from physicians and nurses when they were discharged, and they were also more likely to put this knowledge into practice. The subjects apparently correlated medication with survival. In order to maintain the treatment, subjects

should follow-up visiting. In addition, health education for coronary artery disease patients has become more available in China. The physicians and nurses tend to prolong the time of consultation for every patient, and pay more attention to health education for MI patients. The subjects may also have gained knowledge about the importance of limiting smoking because it was well known that cigarette smoking is the biggest risk of sudden death. Miller and colleagues (1982) found that individuals' knowledge (basic information), attitudes, and intentions were related to their performance of medical regimen in ischemic heart disease patients. In this study, the subjects may have had certain information (beliefs), from which they could develop values, and attitudes leading them to develop a set of intentions about their behavior performance. Intentions could be directly related to performance of follow-up visiting, taking medication as prescribed, and limiting smoking. Therefore, the subjects reported high mean scores in follow-up visiting, taking medication as prescribed, and limiting smoking.

However, dietary behaviors usually are lifelong patterns embedded in social-cultural traditions. Perceived beliefs of family members influenced the patients to follow the prescribed diet. More work is needed in designing interventions that help patients modify their dietary habits (Conn, Taylor, & Casey, 1992). In this study, forty one subjects (68.33%) were male, and nineteen subjects (31.67%) were female (table 1). Women usually cook for their family

members in Chinese tradition. In this study, the subjects reported lower mean scores in modifying nutrition, possibly because the male subjects did not normally cook for themselves.

These findings were supported by Charoenwongwiwat's (1995) research findings. In researching perceived self-efficacy and self-care behaviors among myocardial infarction patients, Charoenwongwiwat studied 60 myocardial infarction patients attending the Cardiac Clinic of Medical Outpatient Division, Ramathibodi Hospital in Thailand. It was found that giving up smoking and taking medication as prescribed had high mean scores, but consuming an appropriate diet had a low mean score.

Part IV Relationship between self-efficacy and health behaviors among the subjects

The hypothesis in this study was that there was a positive relationship between self-efficacy and health behaviors among myocardial infarction patients. By means of Pearson's product moment correlation coefficient, data showed that there was a significantly positive moderate relationship between self-efficacy and overall health behaviors scores($r=.68$, $p < .01$) (table 7). This indicated that the subjects with higher self-efficacy were more likely to perform those health behaviors, which included follow-up visiting, taking medication as prescribed, checking their pulse, abnormal signs and symptoms, exercising, modifying nutrition, limiting smoking, and managing stress. In

addition, by means of Kendall's non-parametric correlation, significant positive relationships were found between each health behavior and corresponding self-efficacy. A high level of relationship between self-efficacy and limiting smoking was reported ($r = .86$, $p < .01$). For the relationships between self-efficacy and health behaviors in exercising and modifying nutrition, the data revealed moderate levels (exercise $r = .55$ $p < .01$, modifying nutrition $r = .52$, $p < .01$). There were low levels of relationships between self-efficacy and health behaviors in follow-up visiting, taking medication as prescribed, and checking pulse, abnormal signs and symptoms and managing stress (follow-up visiting $r = .42$, $p < .01$; taking medication as prescribed $r = .31$, $p < .05$; checking pulse, abnormal signs and symptoms $r = .40$, $p < .01$ and managing stress $r = .44$, $p < .01$, respectively) (table 6).

The findings supported the results of previous studies (Ewart, Taylor, Reese, & DeBusk, 1983; Godding & Glasgow, 1985; O'Leary, 1985; Wassem, 1992; Hickey, Owen, and Froman, 1992). The findings were also consistent with Perkins and Jenkins' (1998) and Charoenwongwiwat's (1995) research findings. Perkins and Jenkins' (1998) research results reported that self-efficacy expectations were significantly and positively related to behavior performance for all study behaviors with the correlation value ranging from .26 to .85 ($p < .001$) among percutaneous transluminal coronary angioplasty patients. The result of the study of Charoenwongwiwat (1995) showed that significant positive

correlation was noted between self-efficacy and self-care behavior among myocardial infarction patients with the correlation value .76 ($p < .001$) in the total scale, and the correlation value ranging from .33 to .79 ($p < .01$, $p < .001$) in each corresponding area, which included taking medication, checking pulse and abnormal symptoms, exercising, consuming appropriate diet, giving up smoking, and managing stress.

In addition, the results were also supported by Bandura's self-efficacy theory. According to Bandura (1977), self-efficacy expectations are derived from four sources: performance accomplishments, vicarious experience, verbal persuasion, and emotional and physical arousal. The sources of efficacy information can enhance individuals' expectations of efficacy and behavior performance. Performance accomplishment provides the most potent source of efficacy expectations because it is based on personal mastery experiences. There was a reciprocal relationship between efficacy expectations and performance; successful changes in health behaviors should increase efficacy expectations. Observations of others' successful performance enhanced individuals' expectations about their own mastery. Verbal persuasions were usually provided through praise and encouragement. Emotional and physical arousal can also influence self-efficacy in threatening situations. Bandura (1986) maintained that cognitive process, especially perceptions of efficacy, played an important role in how individuals judge their ability to perform specific

behaviors and greatly influenced their choice and persistence in those behaviors (cited in Hickey, Owen, & Froman, 1992).

A significantly high positive relationship was found between self-efficacy and limiting smoking. This finding indicated that the higher the conviction of ability, the more limitation of smoking was accompanied. This can be explained in terms of performance accomplishment. The subjects may have participated in peer group or peer counseling, and know how other MI patients could quit smoking from their peers. Additionally, modeling behavior, videos, tapes, books and pamphlets about limiting smoking were also provided. Thus, patients may have imitated limiting smoking strategies. Actual successful performance of limiting smoking can powerfulness enhance self-efficacy and performance. In addition, MI patients may have received knowledge about the importance of limiting smoking from physicians and nurses because smoking is the biggest risk for sudden death and recurrent MI, and thus the patients may have come to believe that limiting smoking is a most important part of health behavior. This belief can develop attitude and intention to limiting smoking. This finding was supported by Grembowski and colleagues' (1993) finding that self-efficacy had a positive correlation with controlling smoking ($r = .51$, $p < .05$) among older adults.

Significantly moderate positive relationships were found between self-efficacy and exercising and modifying nutrition. Subjects who perceived a higher conviction of

ability also had more frequent performances of exercising and modifying nutrition. In China, when the MI patients are discharged, health education was normally provided. The subjects not only gained knowledge about exercise and nutrition from nurses and physicians, but also saw how the other MI patients performed exercise and modified nutrition from the video tapes of role models, and relevant pamphlets. It could be explained that vicarious experience enhanced the subjects' self-efficacy. However, vicarious experience is a second major source of efficacy expectation. Therefore, there were moderate positive relationships between self-efficacy and health behaviors in exercising and modifying nutrition. Additionally, the finding was consistent with the result of the studies of Grembowski and colleagues (1993), Ewart and colleagues (1983), and Conn's (1997). Grembowski and colleagues (1993) found that self-efficacy had a positive correlation with exercise ($r = .53$, $p < .05$) and dietary ($r = .42$, $p < .05$) among older adults. It has been evidenced that self-efficacy is an important factor in predicting physical activity during recovery from myocardial infarction (Ewart, Taylor, Reese, & DeBusk, 1983). Early and progressive exercise has been shown to provide both physiologic and psychological benefits to patients recovering from myocardial infarction (Hudak, Gallo, & Morton, 1998). Perceived physiological state is one source of self-efficacy expectation. Individuals rely on physical feedback to judge their capabilities. Conn (1997) also found that there were positive correlations between self-

efficacy and health behaviors (exercise r = .56; diet, r = .54, $p \leq .0001$) among older women.

Significant low relationships were found between self-efficacy and health behaviors in taking medication, follow-up visiting, checking pulse, abnormal signs and symptoms, and managing stress. It can be explained that a close range of scores was found in both self-efficacy and health behaviors in taking medication and follow-up visiting, and this may have influenced the degree of relationship between self-efficacy and health behaviors. In addition, taking medication, follow-up visiting, and checking pulse, abnormal signs and symptoms were easier to perform compared with other health behaviors. So self-efficacy may not have been predicting these behavior performances. However, managing stress is more difficult to perform compared with other health behaviors. This can be explained in that the difficulty of managing stress might influence behavior performance and the degree of the relationship between self-efficacy and managing stress. Actually, the patients normally perceived a higher level of self-efficacy for managing stress, but they may not have controled their emotion very well during emergencies or exciting events. This finding was also consistent with Conn's (1997) study, which found that there was a low positive correlation between self-efficacy and managing stress (r = .39, $p \leq .0001$) among older women.