Original Article

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A Comparison of Coping Styles and Quality of Life in Patients with Coronary Heart Disease and Healthy People

M.T. Salehi Omran (MD)[1], M. Sadeghpour (MA)*[2], A.A. yaghoubi (PhD)[3], R. Shamsi (GP)[4]

1.Department of Cardiology, Babol University of Medical Sciences, Babol, I.R.Iran
2.Islamic Azad University of Sari, Sari, I.R.Iran
3.Department of Psychology, Islamic Azad University of Behshahr, Behshahr, I.R.Iran
4.Babol University of Medical Sciences, Babol, I.R.Iran

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ABSTRACT

BACKGROUND AND OBJECTIVE: In the medical world one of the most interaction between body and mind are related to coronary heart disease and it is a major cause of morbidity and mortality in the world. For this reason, identifying psychological risk factors in this context is necessary. In this regard, this study was performed with aimed to coping styles and quality of life in CHD patients and healthy individuals.

METHODS: This study was a cross-sectional performed on 100 patients with coronary heart disease and 100 healthy subjects. Data was collected through Lazarus and Folkman coping styles questionnaires that included four problematic coping and four emotion-focused coping style and quality of life of the World Health Organization in four aspects of physical, psychological, environmental and social relationship with demographic characteristics were collected and compared.

FINDINGS: The mean of direct confrontive coping style in patients (8.75±2.81) were significantly more than healthy individuals (7.95±2.86) (p=0.036), the mean of escape-avoidance coping style in patients (9.80±4.59) were significantly more than healthy individuals (8.38±4.25) (p=0.045), and was not found significant difference between two groups in Problem-focused coping style, Also there was a significant difference in quality of life between two groups, in the physical health domain (p=0.000), psychological domain(p=0.001), social relationship domain (p=0.007) and environmental domain (p=0.003).

CONCLUSION: Result showed that the quality of life in CHD patients were lower than healthy individuals and CHD patients used direct confrontive coping style and escape-avoidance coping style, more than healthy individuals. Therefore this two styles can be considered as risk factors for CHD.

KEY WORDS: *Coronary heart disease, Coping styles, Quality of life*

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* **Corresponding author: M. Sadeghpour (MA)**
Address: Department of Psychology, Islamic Azad University of Sari, Sari, I.R.Iran
Tel: +98 11 32032891
Email: marisa.marisa8365@gmail.com

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Introduction

Coronary heart diseases include wide range of diseases such as silent ischemia, chronic stable angina, unstable angina, myocardial infarction, Cardiomyopathy, ischemic and sudden heart death (1). Coronary artery disease, which continues to be developed disease remains an integral factor in 26% of premature deaths in men and 16% of premature deaths in women (2). Coronary artery disease is the leading cause of death in people over 35 years in Iran (3). Research has shown that acute and chronic stress, are the major risk factors for heart disease (4), but coping in the face of a stressor matters more than your stress, (5).

Coping, actively or passively efforts to respond to stressful situations and includes Problem-Focused and emotion-Focused styles. Problem-Focused styles such as problem solving, positive re-evaluation, accountability and the pursuit of social support due to their active role in dealing with stress, checking stressful issues and checking issues away from the excitement are considered as active coping styles. Emotional styles, including direct confrontation, restraint, avoidance style and denial style are considered as passive coping styles (6).

The researchers believe that most people prefer to use certain coping strategies in stressful situations that actually all these strategies constitute individual coping styles (7). One of the main goals of research in relation to coping styles among patients is to determine what kind of coping strategies in specific clinical populations associated with better adjustment (8). Some studies suggest that the use of problem-focused coping styles in healing some patients with acute myocardial infarction were more effective than the emotion oriented coping styles (9).

Patterson findings support the relationship between Problem-Focused Styles and reduction coronary heart disease, but in terms of emotional styles, the relationship was not significant (10). The results of some studies suggest that emotional coping and inefficient in dealing with stress leads to increased stress, and consequently increased cardiovascular reactions in these patients (5). Fernandes et al study showed that there is a significant correlation between the incidence of CHD in men's and direct coping style (11). Stewart and colleagues found that the style of seeking support to search for information, is the most common style in dealing with the stress of myocardial infarction (12). Carver and colleagues found that among the emotion coping styles just direct coping style and the restraint style linked with the occurrence and intensity of coronary artery disease (13). Bagherian sararoudi and colleagues showed that less willing to use the Problem-Focused approaches associated with anxiety symptoms in patients with myocardial infarction and patients are more likely to use emotional styles (14). Heart disease compared with other chronic diseases due to debilitating side effects, the effect is much more acute on quality of life, and it seems that most of these patients because of the special circumstances of their disease, in some aspects of quality of life is impaired (15). In addition, according to Soltani Shal and colleagues' research perceived stress and coping strategies have a direct effect on the quality of life for heart disease (16).

Quality of life is felt or perceived well-being and to develop and maintain reasonable physical, emotional and rational functioning (17). Poor quality of life is associated with worsens the disease, lower survival, increase of the number of days of hospitalization and decreased functional activity heart disease (18). Doustdar and colleagues found that the quality of life in heart patients, is lower than healthy people and groups who would benefit from problem-focused coping style, had a higher quality of life (19).

Beyranvand and colleagues found that the quality of life in patients, six to thirty months after the first acute myocardial infarction declined in psychological scales more than the decline in physical measures (20). Pournaghash and colleagues research represents the quality of life of patients after coronary artery bypass surgery (21). This causes deterioration of the physical, social and personal relation disorders, decreased ability to perform job duties and problems of the economy (22). Since, impaired quality of life has negative effect on the medical condition of the patient, cardiac failure can be a cause of a failing cycle in these patients (23), so checking the quality of life in patients with coronary heart disease can increase our understanding of the living conditions of these patients and help patients' problems can be considered more fundamentally (24).

Also recognizing dysfunctional coping strategies in coronary heart disease patients can be used to provide interventional protocols for use in their rehabilitation. This study aimed to compare the styles of coping and quality of life in patients with coronary artery disease and normal persons.

Methods

This cross-sectional study was conducted by cluster and available sampling. To this end, according to the

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geographical areas in Mazandaran province, the East, Center and West, the center of province randomly selected and then among the cities of this region 5 cities: Amol, Babol, Sari, Ghaemshahr and Fereydunkenar randomly were selected, and finally among hospitals in every city, Imam Reza hospital of Amol, Rohani hospital of Babol, Razi hospital of Ghaemshahr, Fatima Zahra hospital of Sari Imam Khomeini hospital of Fereydunkenar randomly by lottery were elected and referred to the heart care unit (ccu) and the heart department, among patients, 100 eligible and available were selected and filled in with a questionnaire.

Sample of 100 healthy individuals was also selected from patients' companions, as well as some staff in each hospital, after brief interviews and no history of cardiovascular disease. agreement of patients and healthy subjects for inclusion, lack of psychiatric disorders, primarily through interviews with them, diagnosis of coronary heart disease by cardiologists for patients having suitable general medical conditions for patients and absence of any heart disease to healthy by a short interview with them before they were implemented, including criteria for inclusion to the samples.

Patients did not enter the study if they are unable to speak Persian so as to make it difficult to conduct interviews and complete questionnaires, very poor general medical conditions according to the physician's opinion during the hospitalization having other heart conditions like valvular disease and other congenital malformations, unwillingness and unsatisfaction of the subject for participation, residence outside the province. Among patients who had proven coronary disease and diagnosis of chronic unstable angina, myocardial infarction, ischemic heart disease, and coronary artery bypass graft surgery by a cardiologist received were enrolled. By following ethical codes and obtaining informed consent from any sick and healthy subject and giving the necessary information, they were assured that the information received would only be used in the current research and would be protected from any abuse.

Data were collected using Lazarus Folkman and World Health Organization Quality of Life coping styles questionnaire, 26 item version. Demographic questionnaire also includes some demographic characteristics such as age, gender, educational level and marital status was (25-27). Coping Style Questionnaire (CSQ), includes four styles of coping (problem-solving styles, a positive assessment, accountability and social support seeking) and four emotional styles (direct confrontation styles, restraint, avoidance and denial). Cronbach's alpha reliability coefficient for each of the subscales Style Problem-Focused were reported 0.60 to 0.75 and for emotional style subscales were reported 0.66 to 0.79 (25). Also, during the research, the validity of 0.80 was reported for each of the confrontational methods. The total score of the test was 0.84 (26). The World Health Organization Quality of Life Scale (WHOQOL-26) to assess the quality of the lives assesses four domains of physical health, mental health, social relationships and environmental health (27).

The reliability of the questionnaire was measured using Cronbach's alpha and the intra cluster correlation was measured by a re-test, that the reliability values with intracluster correlation index in the field of physical health were reported 0.77, in the psychological domain 0.77, in the social relation area 0.75, and finally in the field of environmental health was equal to 0.84 and the reliability coefficient was calculated 0.7 by re-testing after two weeks. The validity of this questionnaire was also verified in all domains (28). Data were analyzed by SPSS version 22, independent t-test, Chi-square and multivariate covariance analysis and $p < 0.05$ was considered significant.

Results

The mean age of subjects were 50±12.73 years, which were evaluated from 28 to 84 years. The majority of those surveyed, aged 41 to 60 years (53% of coronary disease and 46% of the controls), male (65% coronary heart disease and 62% of the controls) and married (92% coronary heart disease and 93% of the controls), respectively.

The majority of coronary heart disease (46%) were under diploma and the majority of healthy individuals (30%) had a bachelor's degree. In terms of demographic groups in the gender and marital status were not significantly different, but the level of education and sex of the patient and control groups was statistically significant ($p<0.05$) (table 1). In comparison of coping styles and quality of life by entering age and education as factors of covariance showed that only direct confrontation between patients (8.2±75.81) and control group (7.95±2.86) ($p=0.036$), and escape-avoidance, between patients (9.80±4.59)

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and control group (8.38±4.25) significant differences exist (p=0.045) and in the rest of the cases the difference was not significant. It was also found that there is significant differences in the variable quality of life between healthy and sick people in the physical domain (p=0.00), psychology (p=0.001), the field of social relations (p=0.007) and the area of environment (p=0.003) (tables 2, 3).

Table 1. Comparing the features of both healthy and sick people

Variable	Group	Patient N(%)	Healthy N(%)	p-value
Age(Mean±SD)		65.66±10.44	43.38±11.31	0.00
Gender	Man	65(55.1)	53(44.9)	0.08
	Woman	35(42.7)	47(57.3)	
Education	Under the diploma	58(80.6)	14(19.4)	0.00
	Diploma	22(48.9)	23(51.1)	
	Higher than diploma	20(24.1)	63(75.9)	
Marital status	Married	92(49.7)	93(50.3)	1.00
	Single	8(53.3)	7(46.7)	

Table 2. Comparing the average scores in measures of quality of life and coping styles of patients with coronary heart disease with healthy people

Groups	Healthy			Coronary patient		
Indicators	SD±Mean	Min	Max	SD±Mean	Min	Max
Direct confrontation	7.95±2.86	3	16	8.75±2.81	1	15
Getting away	8.34±13.3	2	16	8.57±3.55	1	18
Self-control	10.4±3.2	0	19	10.51±3.24	2	21
Demanding social support	10.23±3.54	1	18	10.55±3.84	2	18
Acceptance of responsibility	6.23±2.41	0	12	6.59±2.49	0	13
Evasion and avoidance	8.38±4.25	0	23	9.8±4.59	0	22
Planned problem solving	9.19±3.15	1	17	9.2±3.13	1	17
Positive reassessment	11.57±3.4	1	20	11.59±3.09	1	20
Physical	64.5±14.62	13	94	47.51±18.19	6	94
Psychological	64.54±16.06	6	94	54.27±17.19	6	94
Social relationships	64.4±18.09	6	100	51.92±21.03	6	100
Peripheral	64.59±13.3	19	100	54.9±15.4	19	94

Table 3. Results of Manoa for coping styles and quality of life scores between the two groups, with adjustment for age and education

Variable	df	MS	F	p-value
Direct confrontation	1	35.93	4.44	0.036
Getting away	1	0.25	0.023	0.881
Self-control	1	0.93	0.089	0.765
Demanding social support	1	14.76	1.07	0.3
Acceptance of responsibility	1	14.88	2.42	0.117
Evasion and avoidance	1	75.65	3.83	0.045
Planned problem solving	1	3.98	0.403	0.526
Positive reassessment	1	0.313	0.029	0.965
Physical	1	483.68	23.48	0.00
Psychological	1	190.78	12.52	0.001
Social relationships	1	40.12	7.46	0.001
Peripheral	1	224.81	8.78	0.003

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Discussion

The results of the study showed that only two direct coping and avoidance-avoidance subcategories are different between the two groups, so that coronary patients use direct-avoidance and avoidance-avoidance styles more than healthy subjects. In general, the results of most researches have suggested that emotional coping methods are the most important mediator of stress and have shown that the use of emotion associated with a negative assessment of stress and thus higher stress levels and lower quality of life (29). These findings, agrees with results of Fernandes et al. research, that showed a significant relationship between direct coping style and incidence of CHD in men (11).

Also, consistent with Carver et al.'s research,that is the fact that direct coping styles exacerbate the disease in men with CHD(13) . Burker et al., Also consistent with the findings of the present study, showed that those who use a more negative strategy, such as avoidance, denial, and self-control, are at risk for coronary artery disease (30). The results of Khanjani et al. showed that among the eight coping styles, the escape-avoidance style is a good predictor of coronary heart disease. And the style of avoiding coping, which is a negative and emotional way to deal with stressful events of life, prevents emotions it creates an emotional inhibition and is among the risk factors that predisposes a person to coronary artery disease (31). One possible explanation is that by avoiding a problematic situation, not only the problem does not be solved, but the possibility of exacerbating it and increasing its pressure on the individual. In this situation, the person makes dangerous actions such as drug and substance abuse, overweight, cigarettes, etc., for forgetting and avoiding the problem.

All of them have a negative effect on heart health. This finding can also be coordinated with the results of Gerin et al., Which showed that there is a significant and positive correlation between the emotional style and the incidence of coronary artery disease, while problematic styles can reduce the chances of developing CHD (32). In line with this finding, the results of Abdollahian et al.'s research also showed that coping strategies of coronary patients based on emotional response were significantly higher than that of healthy controls (33). Therefore, in interventions intended for these patients, in addition to medical interventions, psychological interventions such as training effective coping strategies in prevention and rehabilitation situations of these patients seems necessary. And the similarities of the results of this study with the studies can be due to the similarities and differences in the socio-cultural context. Socio-cultural variables such as customs, habits, cultural norms, even worldview and religious beliefs are important factors that can greatly affect coping styles.

Also, the findings of this study showed that coronary heart disease patients have lower quality of life than all healthy people in all sub-scales. This finding is consistent with the results of Pressler et al. (34), Hatta et al (35), Roshan et al. (15) and Alizadehgoradel et al. (36). It can also be concluded that the findings of the present study are consistent with the results of Nohi et al. They showed that using problem-solving coping methods is related to reducing perceived stress and improving the quality of life in coronary patients (37).

In a study by Tung et al., It was found that more use of problem-oriented coping styles is associated with better quality of life, and promotion of the use of problematic coping styles is essential for achieving the desired quality of life in the process of CHD treatment [38]. Dunderdale et al. also reported that loss of quality of life is an inseparable problem in cardiac patients, in such a way that quality of life in cardiac patients is damaged due to physical symptoms of the disease, the negative effects of treatment and social constraints caused by the disease (39).

Is confirmed by the findings of this research. Therefore, in the social dimension, the results of this study can be compared with the results of the research by Heidarzadeh et al. Differences and similarities in the findings of this study with other studies can be attributed to differences in methodology and type of instrument, and these differences explain the difference in the findings. In explaining these results, it can be said that the disease, other than its signs and symptoms, leads to changes in physical conditions, severe psychosocial symptoms, loss of work safety, a decrease in the duration of recreational activities and social communication, anxiety and disturbance in relationships between individuals, so physical, psychological and environmental conditions of these patients lead to a lower quality of life.

In addition, individual behaviors such as inappropriate nutritional habits, lack of physical activity and exercise, physical and mental stress, weight gain, lack of rest and sleep, smoking, alcohol consumption, etc., can affect their quality of life in

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cardiac patients. Also, the psychological and physical complications of heart disease cause these patients to not have a good quality of life (15), and as the results of the study showed, this disorder affects all aspects of the quality of life of the patient.

The research constraints utilized the available sampling method and the lack of control of variables such as socioeconomic status, emotional intelligence, and personality traits. Considering the role of various factors in coping styles, the role of personality variables in determining coping styles in a hybrid model, including a range of other variables, is suggested.

Also, given the low quality of life in the cardiovascular patients and the high prevalence of this disease in the country, it is suggested that further studies be conducted to identify the factors that predispose or aggravate the disease by providing preventive measures through the provision of strategies and models for improving quality of life and Reduce the risk of this disease. According to the results of this study, there was a significant difference between the type of direct coping and escape-avoidance excitement coping among coronary and healthy subjects and coronary patients used more direct and avoidance styles than healthy people. Therefore, these two styles can be considered as risk factors for CHD. Also, there is a significant difference between the healthy and sick individuals in the physical, psychological, social and environmental fields of the quality of life scale, and the quality of life in coronary patients is significantly lower in all dimensions than in healthy people.

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