

The Relationship between Stress Coping Strategies and Mental Health in Patients with Cardiovascular Disorders

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ABSTRACT

Introduction: Cardiovascular diseases are one of the most common causes of death and health problems in the world. Identifying and modifying the risk factors for these diseases play an important role in reducing the effects and mortality caused by them. Considering the role of psychological stress on the health and well-being of this group of patients, this study examined the relationship between stress coping styles and mental health in patients with cardiovascular disorders.

Methodology: The sample consisted of 85 patients (46 women and 39 men) with an average age of 40/72 years (SD =29/11) which were selected from among the patients referred to cardiologists in the city of Semnan. Tools used in this study were two questionnaires, i.e. stress coping questionnaire and general health questionnaire GHQ-28.

Results: Data analysis was performed using Pearson correlation coefficient and multi-variant regression analysis. In general, the results showed that there is a significant negative correlation between emotion-focused coping style and mental health in patients with cardiovascular disorders ($r=-0/473$, $p < 0/01$). Also, there is a significant positive correlation between problem--focused coping style and mental health ($r=0/380$, $p < 0/01$). Therefore, these styles can be predictors of mental health in these patients.

Conclusion: Using appropriate stress coping strategies can moderate unwanted effects of stressful situations on the physical, psychological and emotional health of the people. Patients with cardiovascular disorders mostly react to their problems emotionally and this exacerbates cardiovascular reactions.

KEYWORDS: stress coping Strategies, mental health, patients with cardiovascular disorders

1. INTRODUCTION

Cardiovascular diseases are among the major health problems in developed and developing countries [1], insofar as they are called the health epidemic of the 21st century. In the last two decades, the prevalence of risk factors for cardiovascular diseases has been increasing in developing countries insofar as it is predicted that by 2020, cardiovascular diseases will be among the major causes of death in developing countries around the world [2]. According to World Health Organization statistics and epidemiology plans in country, the 45/7% of deaths in our country is due to cardiovascular diseases. These diseases will be ahead of World Statistics in our country in the coming years due to the older population, increase in the life expectancy, and improvement of health indicators.

Recent researches have shown that psychosocial factors influence the development and progression of heart diseases [3]. Different risk factors have been identified for cardiovascular diseases, among which psychological stressors play an important role in creating, intensifying and perpetuating these diseases [4,5]. For example, in her study, Sarafino (2006) has shown that stress, depression and denial prolong the process of improvement in patients with cardiovascular disorders. Also, patients with cardiovascular disorders who have severe depression or stress are susceptible to other serious problems such as heart arrhythmias [6].

Health Psychology paid so much attention to the role of coping strategies and people's lifestyle in the mental health in recent years [7]. In fact, what matters more than stress and its intensity in the process of stress-related diseases is the type of individuals' coping and reaction to the stress factor. The use of efficient and inefficient methods has different consequences for physical and mental health of individuals. The results of some studies have

shown that insufficient emotional coping with stress leads to increased tension and consequently, increases patients' cardiovascular reactions [8,9]. The assessment of psychological factors such as coping strategies is essential for the comprehensive understanding of health and cardiovascular risks.

Coping refers to cognitive and behavioral strategies used to manage the complex relationship between person and environment [10]. In another definition, Lazarus (1982) [10] discusses coping as the effort to manage the environments and internal demands and conflicts that exceed a person's resources. In addition to referring to the action and problem solving dimension of coping, this definition considers the adjustment of emotional responses. It is believed that coping adjusts the relationship between environmental stress and psychological responses that ultimately affects the health. Lazarus divides the coping strategies into three categories of emotion-focused, problem-focused and avoidance-focused. In problem-focused coping, an individual controls the stress factor in order to reduce or eliminate the created tension. This strategy reflects an individual's attempt to deal with a difficult situation, such as a study before the exam. Whereas in emotion-focused coping, an individual controls the emotional reactions of stress and tries to reduce the unpleasant feeling, for example, downplaying the importance of exams. In avoidance-focused coping, one avoids to face the stress factor and takes activities that aim at avoiding a situation which causes stress, such as going to the movies [11]. The problem-focused coping strategy is generally an adaptive approach; studies have shown that this method is accompanied by lower levels of depression [12], anxiety [13], and alcohol abuse [12]. On the contrary, it seems that emotion-focused and avoidance-focused strategies are unadaptive and they are associated with symptoms of depression and alcohol abuse [12,14,15].

Studies in the past have shown that behaviors such as depression, anxiety, anger, hostility and stress cause heart diseases; on the other hand, heart disease also creates the same behavioral responses [16]. According to the results of a study in Iran, the patients who had suffered an acute coronary attack experienced more psychological distress compared to healthy subjects when facing stressful life events and dealt with their problems more emotionally; and this exacerbated their cardiovascular reactions [17]. Therefore, one of the main problems in patients with heart disease is their mental health problems which have to be considered and measures must be taken in order to reduce the resulting distresses since the lack of attention to patients' stress and psychological reactions may aggravate their condition. In this study, we have tried to investigate the coping strategies in patients with cardiovascular disease and evaluate the relationship between these strategies and the mental health.

2. METHODOLOGY

This is a descriptive-correlational research which aimed at examining the mental health and stress coping strategies in patients with cardiovascular disease. The statistical population of the study included all patients with cardiovascular diseases referred to heart clinics in the city of Semnan in 2014. The sample consisted of 85 male and female patients. The patients were selected by convenience sampling and patients completed questionnaires if they desired.

Instruments:

Coping Inventory for Stressful Situations (CISS): In this study, Parker and Endler's stress coping inventory (1990) [18] has been used. Currently, coping styles questionnaire with 48 items is considered as one of the reliable tools to measure coping strategies. This questionnaire consists of three coping strategies, namely, problem-focused, emotion-focused, and avoidance-focused. Each of the coping strategies has a separate 16-items scale and the total scores for each of the scales are calculated separately. The average score of each scale is 50 (SD 10). CISS has high internal consistency (alpha coefficient for the problem-focused, emotion-focused, and avoidance-focused subscales has been reported 0/85 to 0/90 for men and 0/83 to 0/90 for women). Shokri *et al.* (2008) [19] examined the factor structure and psychometric properties of the Persian version of the coping inventory for stressful situations. Using Cronbach's alpha coefficient to measure the reliability of stress coping strategies, the following results were obtained: problem-focused strategy 64/0, emotion- focused strategy 60/0, and avoidance- focused strategy 61/0.

General Health Questionnaire (GHQ-28): This questionnaire which was developed by Goldberg and Hilber (1972) [20] includes 28 items. The items include 4 subscales, each of them with 7 items in sequence. Items 1 to 7 are on the physical symptoms, 8 to 14 on anxiety, 15 to 21 on social dysfunction, and 22 to 28 on depression. The results of 43 validation studies on different versions of the questionnaire in different countries showed that the reliability of the 28-item questionnaire for anxiety, depression, social dysfunction and physical pains were respectively, 0/78, 0/82, 0/85, 0/76. Moreover, the correlation coefficient with Beck anxiety test and Zung depression test has been reported to be 0/74 and 0/69, respectively. Several studies have been conducted to examine

the validity of the questionnaire. For example, in Taghva's study (2000), the reliability coefficient of GHQ was obtained 0/72 which was similar to the results of studies by Lighton (1986), and Robinson & Price (1982) [21].

3- RESULTS

The sample included 54% women and 46% men, with the age average of 40/72 (SD=29/11). Among them, 93% were married and 7% were single, and in terms of education, 7/1% had lower than diploma degree, 45/9% had diploma degree, 22/4% had associate degree, 22/4% had bachelor's degree, and 2/4 % had higher degrees. The mean and standard deviation of mental health and coping strategies scores are shown in Table 1.

Table 1: Mean and standard deviation of mental health and coping strategies scores

Variables / Indexes	Mean	Standard deviation
Problem-focused coping style	53/92	9/08
Emotion-focused coping style	47/95	6/62
Avoidance-focused coping style	48/02	8/33
Mental health score	33/23	22/28

The Pearson correlation was used to examine the relationship between coping strategies and mental health in patients with cardiovascular disease.

Table 2: Correlation coefficient between mental health and coping strategies

Research variables	Problem-focused	Emotion-focused	Avoidance-focused	Mental health score
Problem-focused coping style	1	0/108	0/054	**0/380
Emotion-focused coping style		1	0/080	**4/73
Avoidance-focused coping style			1	-0/1
Mental health score				1

** Significance level of less than 0/01

* Significance level of less than 0/05

As can be seen in Table 2, there was a significant negative correlation between emotion-focused coping style and mental health ($p < 0/01$, $r = -0/473$); and there was a significant positive correlation between problem-focused coping style and mental health ($p < 0/01$, $r = 0/380$). There was no significant relationship between avoidance-focused coping style and mental health.

Simultaneous multiple regression analysis was used to assess the prediction of mental health based on coping strategies in patients with cardiovascular disease.

Table 3: Regression analysis of predicting mental health based on coping strategies in patients with cardiovascular disease

Source of variations	B	SE	Beta	T	Significance level
emotion-focused	-1/259	0/21	-0/514	-6/005	0/000
problem-focused	1/478	0/287	0/440	5/150	0/000
avoidance-focused	-0/221	0/228	-0/083	-0/972	0/334

SE: The standard error of regression coefficient

Beta: Standardized regression coefficient of predictor variables

As can be seen in Table 3, among the coping strategies, emotion-focused styles ($p < 0/001$, $B = 51/4$) and problem-focused styles ($p < 0/001$, $B = 44/0$) are predictors of mental health and this explains 41/8% ($R^2 = 0/418$) of the variance.

4. Conclusion

Cardiovascular diseases are one of the leading causes of failure and disability throughout the world. Several studies have shown that psychological stress can affect health and well-being of the patients with cardiovascular disease [22]. Using the appropriate coping strategy when facing the problems, individuals gain more readiness and experience more coping ability. These coping strategies, if used effectively, could moderate the unwanted effects of stressful situations on the physical, psychological and emotional health [23].

The purpose of this study was to evaluate the relationship between coping strategies and mental health in patients with cardiovascular disease. The results obtained showed that there was a significant negative correlation between emotion-focused coping strategies and mental health; moreover, there was a significant positive correlation between problem-focused coping strategies and mental health. The results also indicated that emotion and problem-focused coping strategies are good predictors for mental health of patients with cardiovascular disease. To confirm these findings, it can be said that patients with cardiovascular disease mostly react to their problems emotionally; thus, their reactions are more emotional than those of healthy people [24, 25]. And this exacerbates cardiovascular reactions of these people. Whereas researches have shown that using the problem-focused coping strategies is more adaptive than emotion-focused coping strategies and it is associated with better mental health [7].

Similar researches supports these findings. For example, the research by Pakenham, Stewart and Rogers (1997) [26] on patients with MS showed that the emotion-focused coping is more associated with lower levels of adaptation (depression, helplessness, difficulty in social adaptation) and problem-focused coping is more associated with aspects of better adaptation. Also, Cronje and Pretorius (2013) [27] showed that people with epilepsy use the avoidance-focused strategy more than normal people and this has a significant negative impact on their epilepsy. Moreover, the results of the study by Abdollahian et al (2006) [17] showed that the patients who had suffered an acute coronary attack experienced more psychological distress compared to healthy people when facing stressful life events and their coping responses were more based on emotional inhibition; also, they had more interpersonal conflicts in their relationships.

In the study by Bahrainian and Hosseini (2005) [28], which aimed at determining the relationship between mental health and coping strategies in the newly arrived students, the results showed that individuals with psychiatric disorders used the somatization strategy and emotional inhibition strategy more than others did ($p < 0/05$); and individuals with better mental health had more problem-solving and cognitive assessment ability ($p < 0/05$). The results of the study by Matud (2004) [29], have shown that the emotion-focused coping is less effective and it is more associated with psychological distress than the problem-focused coping is. Many studies have shown that inefficient stress coping strategies makes people vulnerable to mental disorders; and consequently, when dealing with stress, it makes them weaker than before and more susceptible to heart diseases, including myocardial infarction (Heidari and Kiran, 2005) [30]. Therefore, a decrease in emotion-focused coping responses and an increase in effective problem-focused responses can be considered as a shield against stress. It is suggested that beside the physical therapy for patients with heart disease, psychological therapy and learning how to deal with stress also be considered.

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