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Relationship Between Coping Strategies and Perceived Social Support with Stress, Depression and Anxiety in People with Coronary Heart Disease

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Abstract: The present research was conducted to determine relationship between coping strategies and perceived social support and stress, depression and anxiety in patients with coronary heartdisease. The research method was correlation and a sample size of 193 persons was selected among all patients with coronary heartdisease who referred to Imam Ali Hospital of Kermanshah, Iran in January and February 2015 with simple random sampling method. In this research, the subjects filled the Depression Anxiety Stress Scales (DASS-42), coping strategies of Lazarus and Folkman and perceived social support of Zimet. The data was analyzed with Pearson correlation tests and stepwise regression analysis. Results of the research showed that there was positive relationship between emotional-oriented coping strategies and perceived social support and stress, depression and anxiety. There was negative relationship between problem-oriented coping strategies and perceived social support and stress, depression and anxiety ($p<0.01$).

Key words: Coping strategies, perceived social support, stress, depression, anxiety, coronary heart disease

INTRODUCTION

Coronary heart disease includes the cardiovascular diseases which are caused by blood and oxygen deficiency into different tissues of heart. Coronary arteries do perfusion phase into its muscles and tissues and its disorder causes Coronary Heart Disease (CHD). CHD diseases include broad spectrum of diseases such as silent ischemia, stable angina, unstable angina, Myocardial Infarction (MI), cardiomyopathy, ischemia and arrhythmia but CHD appears as stable angina and heart attack (Pischke *et al*., 2006).

This disease is the most prevalent type of cardiovascular diseases for which many people die every year or suffer from all types of disabilities.

Many evidences show strong relationship between mental factors and risk of affliction with CHD. Role of depression, anxiety and stress has been confirmed through the broad studies (Suls and Bunde, 2005; Krantz and McCeney, 2002; Brotman *et al*., 2007; Rozanski *et al*., 2005). Results showed that mental factors played important role (Braunwald, 2012). Accompaniment of mental disorders with cardiac diseases has severe effects on health, improvement trend and their quality of life and leads to increased application of health care, premature disability and economic burden on people and society (Herrmann-Lingen, 2001).

Of the factors which seem to have role in mental health of the people with coronary heartdisease are coping strategies and perceived social support. Coping styles, active or passive efforts to react against stressful conditions and situations aim to avoid or reduce stress and include problem-oriented and emotional-oriented coping strategies (Lazarus and Folkman, 1988). In problem-oriented coping strategy, people try to reduce mental stressful effects by defining and evaluating the problem and study possibility of change or dominating over it. On the other hand, people reduce their anxiety and worry by forgetting the problem or attracting emotional supports (Endler and Parker, 1990). Results of the studies showed that emotional-oriented copings led to increased stress (Strickland *et al*., 2007), distress and worry (Matthews *et al*., 2000), depression, anxiety and physical symptoms (Beasley *et al*., 2003). Problem-oriented coping also has negative relationship with psychological distress (Matthews *et al*., 2000) and depression (Maximos *et al*., 2011) and positive relationship with health promoting behaviors (Christensen *et al*., 1995).

One of the determining social factors of health which refer to importance of social dimension of human and has attracted special attention in recent years is social support (Lang and Stein, 2001). Studies showed that social support had useful effects on cardiovascular condition and immune system of body (Streeter and

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Franklin, 1992). Perceived social support is formed by cognitive evaluation of environment and his relation with others. Theorists of perceived social support mention that all relations which person has with others are regarded as social support. In other words, social communication is not source of social support unless person perceives it as an accessible or suitable source for fulfilling his need, therefore, not support but person's perception of support is important (Tracy, 1990). Perceived social support has the lowest negative effect on coronary heart disease (Barth, *et al*., 2010). Perceived social support acts as a protector against stressful events of life, increase of following the medical treatments and improving medical diseases (DiMatteo, 2004). Results of the research by McCorkle *et al*. (2009) showed that social support had role in increase of welfare and reduction of psychological symptoms particularly depression.

Mythological condition of patients such as depression, anxiety and stress is effective on following therapeutic recommendations by cardiac patients and effectiveness of treatment. Considering this problem, the factors which play role in mental health of patients should be studied to promote health of cardiac patients by identifying the effective factors and applying them in interventions. Therefore, the present research was conducted to determine relationship between coping strategies and perceived social support and stress, depression and anxiety in people with coronary heartdisease.

MATERIALS AND METHODS

This cross-sectional research with correlation method was conducted. Statistical population of the research included all patients with coronary heartdisease who referred to Imam Ali Hospital of Kermanshah, Iran in January and February 2015 and a sample size of 191 persons was selected with simple random sampling method. This sample included 112 men and 79 women whose mean age was 55.9±12.99. The inclusion criterion of the study included minimum high school degree, lack of psychological disease and chronic medical disease but CHD and duration of disease for 1 year. The selected patients filled the questionnaires after announcing consent for participation in the research and receiving necessary assurance that their information is kept confidential. After filling the questionnaire by the patients which was conducted individually and in the presence of researcher, the research questionnaires were collected. The research data was analyzed with SPSS19 software and indices of mean, standard deviation, Pearson correlation coefficient tests and stepwise regression analysis.

Research tool

The Depression Anxiety Stress Scales (DASS-42): This scale is a self-reporting questionnaire which was designed and constructed by Lovibond and Lovibond (1995). He determined psychometric features on the students and nonclinical samples. This questionnaire evaluates three mental conditions of depression, stress and anxiety and has items relating to symptoms of depression (14 questions), anxiety (14 questions) and stress (14 questions). To respond to any item, points were assigned as never (0), to some extent (1), greatly (2) and very greatly (3) and total points gained by the caregivers show rate of depression, anxiety and stress with range of scores between 0 and 42. Psychometric features of this questionnaire were studied and confirmed by Afzali *et al*. (2007) on 400 students of high school in Kermanshah. Findings of the study have reported correlation between depression scale of this test and Beck depression as 0.84, correlation between it and Zung self-assessment anxiety scale as 0.83 and students stress scale-sss as 0.75. Alpha coefficient calculated for depression, stress and anxiety scale was reported as 0.94, 0.85 and 0.87, respectively (Afzali *et al*., 2007). This questionnaire was validated by sepehri and samani and its alpha coefficient has been reported as 0.89 for depression, 0.84 for anxiety and 0.68 for stress. In the present research, Cronbach's alpha of the questionnaire was obtained as 0.95.

Perceived social support scale: This 12 term scale has been constructed by Dahlem, Zimet and Farley with three sources of family, friends and important persons in life. The subjects mention their responses in a likert 7 point scale (from I fully disagree to I fully agree). Total alpha coefficient of the test has been reported 0.91 and alpha coefficient of its subscales has range of 0.90 to 0.95. Perceived social support scale was first translated to Farsi by Masoud Nia in Iran. The 3 factors were recognized on 12 articles of this scale with Principal component analysis. These factors include support by the friends, support by family and support by important persons. To calculate internal reliability of the perceived social support scale, Cronbach'alpha method was used. Results showed that internal reliability of the perceived social support scale is equal to 0.89 and internal reliability of the subscales of perceived social supportby friends, perceived social support by family and perceived social support by important persons have been equal to 0.78, 0.81 and 0.87. Internal reliability of the subscale of perceived support was calculated as 0.78 with Cronbach's alpha (Masoudnia, 2011). In the present research, Cronbach's alpha of the scale was obtained as 0.87.

Coping strategies scale: This scale was prepared by Lazarus and Folkman (1988) and includes 66 questions. This scale measures 8 coping strategies. These 8 models have been divided into two classes of problem-oriented methods (seeking social support search, accepting responsibility, playful problem solving and positive reappraisal) and emotional-oriented methods (confrontive coping, distancing, self-controlling and escape-avoidance). This scale has 66 questions and has Likert 4-point scale in which (0) represents "I didn't apply", (1) represents " I applied it to some extent", (2) represents "I applied it much" and (3) represents "I applied it very much". Lazarus has reported internal consistency of 0.79-0.66 for each of the coping strategies. Cronbach'salpha is 0.86 for total coping strategy, 0.72 for emotional-oriented coping and 0.79 for problem-oriented coping. In Iran, Ghadamgahi *et al.* (1998) reported internal consistency of 0.61-0.79 with Cronbach's alpha and reported its retest validity as 0.59-0.83 in 4 weeks interval. In the present research, Cronbach's alpha of the scale was obtained as 0.90.

RESULTS

Considering Table 1, means of stress, depression and anxiety are 18.74±8.17, 14.41±8.14 and 14.49±7.14, respectively.

To study relationship between coping styles (problem-oriented and emotional-oriented) and perceived social support and stress, depression and anxiety, Pearson correlation coefficient was used. Results showed that there was negative and significant relationship between problem-oriented style and stress (r = -0.39, p = 0.001), depression (r = -0.22, p = 0.001) and anxiety (r = -0.16, p = 0.02). Results also showed that there was negative and significant relationship between perceived social support and stress (r = -0.21, p = 0.003), depression (r = -0.26, p = 0.001) and anxiety (r = -0.26, p = 0.02) (Table 2).

To predict stress, depression and anxiety based on variables of coping styles (problem-oriented and emotional-oriented) and perceived social support, stepwise regression analysis was used. Results showed that stress was predicted in two steps and 0.36% of variance of stress is determined in the second step with problem-oriented and emotional-oriented coping styles and problem-oriented coping style is able to predict stress with β coefficient of -0.54 and emotional-oriented coping style with β of 0.48 ($p<0.01$). Depression was predicted in three steps and 41% of the of variance of depression is determined in the third step with problem-oriented and emotional-oriented coping styles and perceived social support and problem-oriented and emotional-oriented coping styles and perceived social support are able to predict depression with Beta coefficient of 0.56, -0.44 and -0.14 ($p<0.001$). Results showed that depression was predicted in three steps and 0.30% of the of variance of anxiety is determined in the third step with predictor variables and emotional-oriented, problem-oriented coping styles and perceived social support are able to predict anxiety with Beta coefficient of -0.16, -0.29 and 0.49 ($p<0.01$).

Table 1: Mean, standard deviation and correlation coefficients between variables

Variables	Mean (SD)	1	2	3	4	5	6
Stress	18.74 (8.17)	1					
Depression	14.41 (8.14)	0.78**	1				
Anxiety	14.49 (7.14)	0.66**	0.73**	1			
Problem-focused coping strategy	31.74 (7.06)	-0.39**	-0.22**	-0.16*	1		
Emotion-focused coping strategy	34.65 (7.92)	0.31**	0.44**	0.42**	0.30**	1	
Perceived social support	67.89 (10.97)	-0.21**	-0.26**	-0.26**	0.14*	-0.11	1

*p<0.05; **p<0.01

Table 2: Predicting of stress, depression and anxiety according to coping strategies and perceived social support

Criteria variables	Steps	Summary of model	Predicting variable	B	β	t-values	Sig.
Stress	2	R = 0.60	Problem-focused coping strategy	-0.67	-0.540	-8.95	0.001
		R^2 = 0.36	Emotion-focused coping strategy	0.52	0.480	7.90	0.001
		F = 54.86					
		Sig. = 0.001					
Depression	3	R = 0.64	Emotion-focused coping strategy	0.57	0.560	9.14	0.001
		R^2 = 0.41	Problem-focused coping strategy	-0.51	-0.440	-7.40	0.001
		F = 44.27	Perceived Social Support	-0.10	-0.014	-2.45	0.001
		Sig. = 0.001					
Anxiety	3	R = 0.55	Problem-focused coping strategy	0.44	0.49	7.60	0.001
		R^2 = 0.30	Emotion-focused coping strategy	-0.29	-0.29	-4.50	0.001
		F = 27	Perceived Social Support	-0.10	-0.16	-2.61	0.010
		Sig. = 0.001					

DISCUSSION

The present research was conducted to determine relationship between coping strategies and perceived social support and stress, depression and anxiety in patients with coronary heartdisease. Results of the research show that there is negative and significant relationship between problem-oriented coping strategies and stress, depression and anxiety that is the more the patients use problem-oriented coping strategies in coping with situations, the less the stress, depression and anxiety they will have. There is positive and significant relationship between emotional-oriented coping strategies and stress, depression and anxiety that is the more the patients use emotional-oriented coping strategies in coping with situations, the more the stress, depression and anxiety they will have.

Based on results of the research it can be said that emotional-oriented coping strategies with impact coefficient of -0.54 have the highest ability to predict stress and emotional-oriented coping strategies with impact coefficients of 0.56 and 0.49 have the highest ability to predict depression and anxiety. The coping strategies which people select draw a profile of their susceptibility and affect mental health of people by adjusting mental pressure. The patients who use problem-oriented coping strategies in coping with life events and problems define and evaluate the problems more carefully and they will be psychologically satisfied by finding suitable solutions for the problem and this causes intellectual solidarity and reduces emotional distress in them. These results are in line with researches (Matthews *et al*., 2000; Maximos *et al*., 2011; Christensen *et al*., 1995). On the contrary, the patients who use emotional-oriented coping strategies avoid being involved with problems directly and effectively and seek to find temporary tranquility instead of fundamental solution. Generally, emotional-oriented coping has been introduced as the most effective intermediary between stress and disease based on different studies (Pakenham, 2001). In stressful diseases, general and psychological health (Piko, 2001) is aggravated in those who continually use emotional-oriented coping (Ireland *et al*., 2005). results of the researches showed that emotional-oriented coping led to increased stress (Strickland *et al*., 2007), distress and worry (Matthews *et al*., 2000), depression, anxiety and physical symptoms (Beasley *et al*., 2003; Maximos *et al*., 2011).

Results showed that there was negative and significant relationship between perceived social support and stress, depression and anxiety that is the more the perceived social support of the patients the less the stress, depression and anxiety will be found. Perceived social support with impact coefficients of -0.16 and -0.14 is able to predict depression and anxiety, respectively. Results of research by McCorkle *et al*. (2009) showed that social support plays role in increase of welfare and reduction of psychological symptoms particularly depression.

Social support helps patients cope with cardiac diseases and is effective on cognitive assessment of the person and his beliefs in the world. In addition, social support can protect against experience of stress and adjusts discomfort of person and mental distress. As a result, since cardiac disease is a stressful event, perceived social support in the patients can play important role in acceleration and aggravation of the cardiac disease. Heart is one of the most important and sensitive organs of the human body. Its injury has undesirable effect on mental condition of person and this intensifies disease in people with cardiac disease. Therefore, suitable strategies can be performed to improve prognosis and duration of hospitalization in patients and promote mental health level and their quality of life by recognizing and paying attention to factors related to mental health of cardiac patients. Considering results of the research, psychological interventions and particularly role of coping strategies and perceived social support should be considered for curing the cardiac patients aside from medical measures. In other researches, these variables are studied in other chronic patients. The present research was conducted among the patients with coronary heartdisease referring to Imam Ali Hospital of Kermanshah, Iran. Therefore, results should be generalized carefully. Since, demographic variables such as gender, economic condition and education have not been studied in this research, it should be considered in the future studies.

CONCLUSION

Results of regression analysis showed that problem-oriented coping strategies were a strong predictor of stress and emotional-oriented coping strategies for depression and anxiety. Considering results of the research it can be concluded that the patients who have emotional-oriented coping strategies experience more depression and anxiety. On the contrary, the patients who have more problem-oriented coping strategies have lower depression, anxiety and depression. Therefore, role of coping strategies and perceived social support should be considered to formulate psychological interventions for coronary heartdisease.

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