The Comparison of Emotion Regulation Strategies and Anxiety Sensitivity in Patients with Coronary Heart Disease and Normal Population

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Abstract-The aim of this study was to compare the anxiety sensitivity and emotion regulation strategies in patients with coronary heart and normal individuals. This post-hoc research is ex post facto. The study population included patients admitted to the Rehabilitation Institute of Sedigheh Tahereh, of whom 115 patients were selected by convenience sampling method. Normal people to choose from among all healthy people in the study, 115 subjects were selected by convenience sampling method. Two groups in terms of age, education and gender were matched. The assessment tool, anxiety sensitivity questionnaire, a questionnaire is emotion regulation strategies. Data through multivariate analysis of variance were analyzed in spss-18 software. The results showed that the variable of emotional regulation strategies in terms of self-blame, blame, acceptance, positive renewed interest and adoption of opinion between the two groups part. The variable of anxiety sensitivity are afraid of difference between the two groups in terms of cardiovascular gastrointestinal symptoms, fear of respiratory symptoms and fear of failure is significant cognitive control ($0.05 > p$). Other components of the variables did not show a significant difference between the two groups. It seems that features a significant role in this disorder is emotional. To identify and control these variables can be helped to reduce symptoms of the disease.

Keywords- anxiety sensitivity, emotion regulation strategies, coronary heart

I. INTRODUCTION

Experts in epidemiology, for decades have examined the rate of coronary artery disease in different cultures; their results show those cardiovascular diseases, diseases in developed countries, the incidence of heart disease in industrialized societies more than other countries (Sarafino, 2006). According to research, this disease is the most common cause of hospitalization in adults (Kiton and Pires, 2007). It is predicted that by 2020, heart disease will kill 25 million people annually (Shepherd and Wiley, 2012). Emotion regulation, first proposed in the literature of psychological development, but in adults were studied (Gross & Thompson, 2007). Gross (1998) emotion regulation considers the balance between logic and emotion, and emotion regulation is described as cognitive ability in information systems of excitement. In addition Butler (2001) considers emotional inhibition as a form of emotion regulation. Emotion regulation is a critical component of everyday life and bad emotion regulation is inappropriate with a variety of mental disorders and related aggression (Davidson, 2000).

Given the different approaches of the two strategies can be re-evaluating the emotional inhibition and excitement to regulate their emotions. It seems that these two strategies are different in terms of their impact on the experience of emotional and psychosomatic processes related to it (such as heart rate, skin conductance response and brain activity). Often, reassess emotional, thrilling experience to be able to reduce, reduce or modify physiological activities and improved social performance (Gross, 2003).

Researchers have made great strides taken in the conceptualization and measurement of emotional vulnerability, a concept that leads to human suffering in general and specifically the morbid anxiety (McNally, 2002). Another structure wide attention in the literature devoted to the study of anxiety disorders. It is assumed that anxiety sensitivity is a variable that represents the desire for a stable tendency to interpret the implications of physical, mental, and social anxiety experience as annoying and dangerous things (Morris et al., 2001). Anxiety sensitivity leads to bias in the retrieval and processing of information related to the call triggers anxiety; that it provides for a person to mental disorders such as social anxiety (McKabi, 1999). This recognition factor, increases the risk of developing anxiety symptoms, panic attacks and unexpected as well as morbid anxiety (e.g. panic disorder) (Hayward, Killen, Kramer and Taylor, 2000; Schmitt, Zulneski and Miner, 2006). It is assumed that anxiety sensitivity is a stable orientation, indicating a desire to interpret the implications of physical, psychological, social and experiences anxiety as annoying and dangerous things (Morris et al., 2001).

Studies have shown that anxiety sensitivity increases risk of developing morbid anxiety and operated as a risk factor in this context. Recent theoretical models more emphasis on the importance of how to deal with stressful experiences (McNally, 2002). In fact Anxiety Sensitivity refers to the fear of anxiety and anxiety-related symptoms and is made from the belief that these symptoms lead to the potential consequences of Traumatic result in physical, psychological and social (Taylor, 1995; quoted by Isao et al., 2010). In fact, existing research indicates that anxiety sensitivity may be considered as a risk factor for anxiety problems (Zulneski, Schmitt, Bernstein and Kiaf, 2006). This recognition factor increases the risk of developing anxiety symptoms, panic attacks unexpected, and also the morbid anxiety (e.g. panic disorder) (Hayward, Killen, Kramer and Taylor, 2000; Schmitt, Zulneski and Miner, 2006).

Lactic, Jarsma, Sandman et al (2011) in their study on the effects of anxiety and depression in the course of coronary heart disease, said that anxiety and depression has a negative impact on the treatment and recovery process them. So that anxious and depressed patients have poorer treatment than non-depressed and non-distressed patients.

Zafar, Pazipr, Limbo, et al (2010) showed that effective psychological anxiety is the most important factor in cardiovascular disease and anxious patients more than depressed patients, and less than non-distressed and non-depressed patients, are adhere to the doctor's orders.

Zulneski et al (2004) in a study showed that anxiety sensitivity is associated with escape and avoidance behavior. These findings show that for those who have higher levels of anxiety sensitivity, increased expectations of them could be the following:

1. The fear of anxiety (qualifier) 2-arousal, anxiety 3. Use cognitive or behavioral strategies to escape the inner feelings.

Begley (1994), evidence showed them that problems in regulating emotions, such as anger and anxiety play a role in the incidence of health problems such as cardiovascular diseases, and enteral.

Therefore, of interest to many researchers, theorists and clinicians, is emotion regulation strategies (Gross, 1998). This study is to examine these factors in coronary heart disease.

II. RESEARCH METHODOLOGY

The method of this study is causal-comparative post-event. The study population consisted of two groups. Groups of patients: All patients from Esfand 2012 to Shahrivar 2013 of the Rehabilitation Institute of Cardiovascular Sedigheh Tahereh were referred. Normal group, all the normal controls and patients were referred to the Institute of Cardiovascular Sedigheh Tahereh and in terms of gender, age, socio-economic database to be matched with the patient group.

Due to the fact that the causal-comparative study, at least 15 people are participating in each group (Delaware, 2011), so in this study, because of the credit for each group, 115 persons have been considered.

1. All patients who suffer from coronary heart disease were only cardiologist and simultaneously to severe physical diseases such as diabetes, MS and other diseases were not affected (no other diseases).

2. The age range of 35 to 85.

3. The disease is at least one year.

4. There is physical health in the test (lack of hearing and vision problems).

5. Based on clinical interviews, patients cannot have a serious mental disorder such as schizophrenia, bipolar disorder and other diseases.

Completely anonymous questionnaire was given to the members of their identity not be revealed.

Participants were assured that the data from the questionnaires, in line with the objectives and hypotheses of this study will be used. Respond to research questionnaires, as well as optional and freely to people wanting to participate withdraw it. To analyze the data, have been used, descriptive statistics such as mean and standard deviation, and inferential statistics multivariate analysis of variance.

III. RESEARCH TOOLS

A. Demographic form

This is the form was designed and included questions about age, gender, marital status, education, occupation, income, smoking and consumption of narcotics.

B. Emotion Regulation Questionnaire (CERQ)

This questionnaire is a self-assessment tool by Granfeski (2001) to identify cognitive coping strategies was developed after experiencing negative events or situations. The original version of this questionnaire with 9 components (blame, acceptance, rumination, positive refocusing, refocus on planning, positive reappraisal, perspective-taking, catastrophizing and blaming others) has 36 articles. This questionnaire in normal and clinical groups from the age of 12 years is applicable. The questionnaire responses on a continuum 5 degrees (always, often, often, sometimes, never) are collected. Iran test by Hasani (2010) was translated and used. The creators of this questionnaire have credit through Cronbach's alpha for positive strategies 0.91, negative strategies 0.87 and total scores 0.93. Credits obtained for all test using Cronbach's alpha 0.92 and 0.77 to 0.88 was the case for forming agents, and using the test-retest for the test were 0.77 (Hasani, 2010).

C. Anxiety Sensitivity Inventory -Revised (ASI-R)

This questionnaire in 1985 was built by Rice and Peterson. Taylor and Cox, drafted revised Anxiety Sensitivity Index, and many questions are irrelevant, vague and incomprehensible replaced with more appropriate questions and questionnaires from three dimensions to four dimensions, and the number of

matter increased their questionnaire from 16 to 36. This questionnaire has four subscales:

1. The fear of cardiovascular symptoms, gastrointestinal

2. The fear of respiratory symptoms

3. Fear of anxiety reactions seen in public

4. Fear of failure is cognitive control.

The results of this questionnaire by Cronbach's alpha coefficient of internal consistency for each factor respectively 91%, 87%, 82%, 85%, and the correlation between anxiety sensitivity index was revised and Anxiety Sensitivity Index of 94% have been reported.

IV. RESEARCH METHOD

At first cardiologist to clinical assessment of patients and patients with coronary artery received a clinical diagnosis. Next, the researchers initial description and preparation of patients for the research to do. After identification, the questionnaire was placed in the hands of individuals.

V. RESULTS

Mean age of coronary heart disease is 61.29, and standard deviation is 8.58, and the average age of normal people is 58.88, and standard deviation is 8.24. From the total number of 115-member of coronary heart disease Group, 74 patients (64.3%) was men and 41 (35.7%) was women. Using of multivariate analysis is required to comply with some defaults. Results of Bax indicated the equality of covariance (P> 0/05; F = 2.21) assuming the equality of variance between the two groups in blaming strategies of others, Catastrophizing and renewed focus on planning has been considered. But about strategies of self-blame, subjective rumination, acceptance renewed focus positive, positive marketing, and adopt the point of view were not respected. Also by default covariance equality has not been achieved. But considering the large sample sizes and more than 40 people, the use of standardized measurement tools and distance of measure the dependent variable can be used parametric statistics.

In Table 1. The mean and standard deviation of emotion regulation strategies in normal subjects and coronary heart disease is presented.

As seen in Table 2, the strategy of self-blame, others blaming strategy, strategy acceptance, positive renewed focus strategy, adopting a view point strategy, there is a significant difference between the patients with coronary heart disease and normal subjects, but in other components, the difference between the two group is not significant (P <0/05)

VI. DISCUSSION AND CONCLUSION

The first hypothesis of this study deals with the study of emotion regulation strategies in patients with coronary heart and normal individuals. Given that we can say that the self-blame, blame others more than normal in patients with coronary heart disease and level of acceptance, positive regard and adopt this approach in patients with coronary heart disease is higher than normal, but the variables rumination, Catastrophizing, renewed focus on positive marketing plan and there is no significant difference between the two groups. The results of this study are consistent with the results, Begley (1994), which was to show a significant difference between the patients and normal emotion regulation there. Research suggests high levels of emotional disorders in patients with coronary heart disease have been reported that high levels of stress, depression and anxiety as a result of neurosis in these patients.

Gross (2007), different people use emotion regulation strategies can be divided into two main groups: People who focus on the events prior to the thrill of a virgin and who is dumped focus on emotional responses. In fact, a re-evaluation of cognitive emotion regulation is associated with positive and negative thoughts. As shown in negative emotion regulation strategies (self-blame and blame others) score higher than the normal subjects and in patients positive strategies (acceptance, positive regard and adopt this view) score was significantly lower in the patient group of people is normal.

This shows that in the face of life events, patient groups actively employ strategies that use this insignificant role is negative and negative emotions and maladaptive behavior. Patients with coronary artery disease cope with stress situations and applied, using strategies and more negative emotional responses. The negative emotional response that makes them more healthy people tend to aggravate cardiovascular reactions occurs in these individuals.

Stress and life events, with the onset of the disease are related; however, there may be other parameters that modify the relationship between stress and disease. An emotion regulation strategy is one of the most important demographic variables. Reducing the handling and control of the various situations of life, and feel the unpredictability of events, her ability to cope with psychological variables and personality may be, coronary artery disease through behavioral patterns, including malfunctions behavior or failure in health-related behaviors and positive influence. Emotional regulation unit process is not homogeneous, but is realized through different mechanisms. Emotional regulation, requires the activation of certain cognitive processes, various cognitive processes leads to emotional regulation strategies, diverse and separate (Gross & Thompson, 2007).

Effective regulation of emotions can reduce the intensity of negative emotional responses to situations of anxiety (Carti, Horch, Abter, Edge and Gross, 2010). Analysis of the results showed that the group of patients in terms of emotion regulation is lower than normal. Lack of acceptance and understanding of negative emotions can lead to feelings of shame or embarrassment. In other words, because of the reduced ability to cope with emotional event, her joy reduces (Kubasa, 1982). Given this perspective, the positive and adopt a positive and effective emotion regulation strategies are considered. Results showed that patients with a lower score in this dimension, compared to the control group. As previous research showed that, using this strategy, reduce the experience

and expression of negative emotions at the moment (Goldin, Manbar, Hakimi, Kennelly and Gross, 2009).

The re-evaluation, an adaptive emotion regulation strategy is seen as more experienced and expressed positive emotions and well- being than connected (Gross & John, 2003). In adults, reassessment is related to the experience and expression of positive emotions and experience fewer negative emotions and also betters interpersonal functioning and more well. Lack of acceptance and continuance blame yourself or others associated with less experience and expression of positive emotions, and experience more negative emotions, interpersonal worse performance, and lower well-being in adults (Gross & John, 2003). Lack of effective use of this strategy will result in coronary heart disease patients that experience negative emotions, have more continuity, which, creates a physical illness such as coronary talent-ability to create.

The second study deals with variable susceptibility to anxiety between coronary heart disease and normal subjects. Donnelly and McNally (1989) stated that patients with coronary heart disease, provides the opportunity to these people to be sensitive to your heart pounding, and thus learn to fear conditioning. This disastrous sensitive and treat their symptoms, focused on the smallest physical symptoms, and these expectations are formed, the initiator signs of a heart attack. The other explanation, it could be concluded more state support that feature parents of children with heart disease, in people with coronary artery disease may reinforce the belief that even the tiniest signs your body is dangerous. The behavioral view suggests that anxiety sensitivity may arise through conditioning and observational learning. Baron and colleagues (2008) have suggested that anxiety sensitivity in explaining the Anxiety Sensitivity in Patients with Coronary heart disease may be due to repeated experiences. Means recurrence, precedes the presence of anxiety disorder. Accordingly, it can be said, that the disease stimulate autonomous systems, duct and sensitivity of the patient's blood, which can be dangerous, causing life-threatening and terrorizing the patients that ultimately may predispose the patient to the anxiety and anxiety sensitivity.

As well as other potential anxiety sensitivity may precede the symptoms of the disease. Biological theories suggest that anxiety sensitivity can lead to symptoms of coronary heart disease in these patients. A higher score in terms of fear, the heart and gastric-intestinal symptoms, fear of respiratory symptoms and fear of lack of cognitive control, in the control group than patients in this study, can be caused by sample selection. Symptoms raised in this questionnaire, there are signs that more panic disorder. In this disorder, a common symptom, is a false belief in the occurrence of heart attacks and gastro-enteral, respiratory and lack of cognitive control. Because the participants of this group are those who have received a diagnosis of coronary disease and not panic disease so symptoms are real, and participants with detailed knowledge of their symptoms, relatively accurate assessment of their condition and do not experience symptoms similar to panic removing the fear that comes with a lot. Among the limitations of this study, sampling, non-homogeneity of heart patients

according to disease type (only with drug therapy, drug therapy and surgery at the same time), lack of control of the disease and the study of genetic and environmental factors in disease which can be limited generalizability of the results. It is recommended to better identify psychological variables manifest and latent talent-risk heart disease, structural models are also examined.

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Row	Emotion regulation strategies	Coronary heart		Normal	
		Mean	Standard deviation	Mean	Standard deviation
1	Blame yourself	10	4.04	8.84	2.76
2	Blame others	8.69	3.33	7.51	3.61
3	Subjective Rumination	10.22	3.64	10.32	2.92
4	Catastrophizing	8.67	3.83	8.34	3.19
5	Accepting	9.79	2.62	11.61	3.61
6	Renewed focus on planning	13.25	4.25	13.21	4.97
7	Attention again positive	11.40	2.73	12.79	4.13
8	Positive Marketing	11.18	3.31	11.98	4.34
9	Adopt a view point	11.68	2.69	12.63	3.78

In Table 2. Multivariate analysis of variance (MANOVA) about the comparison of emotion regulation strategies have been proposed.

TABLE II. RESULTS OF MULTIVARIATE ANALYSIS OF VARIANCE OF EMOTION REGULATION STRATEGIES IN BOTH NORMAL SUBJECTS AND CORONARY HEART DISEASE

Row	Emotion regulation strategies	Sum of squares	Degrees of freedom	Mean Square	F factor	meaningful	Square root of ETA	Test Ability
1	Blame yourself	78.49	1	78.49	6.58	0.011	0.028	0.72
2	Blame others	81.61	1	81.61	6.77	0.010	0.029	0.74
3	Subjective Rumination	0.63	1	0.63	0.06	0.810	0.001	0.06
4	Catastrophizing	6.33	1	6.33	0.51	0.475	0.002	0.11
5	Accepting	191.04	1	191.04	19.23	0.001	0.077	0.99
6	Renewed focus on planning	0.086	1	0.086	0.004	0.95	0.001	0.50
7	Attention again positive	112.55	1	112.55	9.21	0.003	0.038	0.86
8	Positive Marketing	37.11	1	37.11	2.49	0.12	0.011	0.35
9	Adopt a view point	52.85	1	52.85	4.91	0.028	0.021	0.59
10	Lambda Wilks	$P < 0.01$, 0.83, 4.96						

TABLE III. TEST RESULTS LAVIGNE, IN THE CASE OF DEFAULT EQUALITY OF VARIANCE COMPONENT OF ANXIETY SENSITIVITY

Row	Anxiety Sensitivity components	Lavigne Test				Bax Test	
		F	Degrees of freedom	Degrees of freedom	meaningful	F	meaningful
1	Fear of cardiac symptoms, gastrointestinal	3.45	1	230	0.06	1.84	0.07
2	The fear of respiratory symptoms	0.03	1	230	0.86		
3	Fear of observable anxiety reactions	2.36	1	230	0.14		
4	Fear of lack of cognitive control	1.42	1	230	0.23		

As seen in Table 4, assuming the equality of variance and covariance of this hypothesis has been observed for all components. Thus, we can be trusted variance test results. In Table 4. The mean and standard deviation of components of anxiety sensitivity in normal subjects and patients with coronary heart disease is presented.

Row	Anxiety sensitivity	Coronary heart		Normal	
		Mean	Standard deviation	Mean	Standard deviation
1	Fear of cardiac symptoms, gastrointestinal	7.82	4.22	6.18	3.87
2	The fear of respiratory symptoms	11.84	7.83	9.49	7.72
3	Fear of observable anxiety reactions	10.26	5.29	9.59	6.53
4	Fear of lack of cognitive control	20.18	14.68	15.76	12.91

In Table 5, the results of multivariate analysis of variance (MANOVA) for anxiety sensitivity are provided.

Row	Emotion regulation strategies	Sum of squares	Degrees of freedom	Mean Square	F factor	meaningful	Square root of ETA	Test Ability
1	Fear of cardiac symptoms, gastrointestinal	155.59	1	155.59	9.47	0.002	0.040	0.86
2	The fear of respiratory symptoms	320.71	1	320.71	5.29	0.022	0.023	0.63
3	Fear of observable anxiety reactions	25.29	1	25.29	0.72	0.39	0.003	0.13
4	Fear of lack of cognitive control	1133.64	1	1133.64	5.94	0.016	0.025	0.68
5	Lambda Wilks	$P< 0.01$, 6.04, 0.90						

As seen in Table 5, in fear of cardiac symptoms, stomach and intestines, Fear of respiratory symptoms, after a lack of cognitive control among patients with coronary heart disease and normal subjects. But in component $F = 9.47$ and $P <$ There is a significant difference. Fear of observable anxiety reactions between the patients with coronary heart disease and normal individuals there is no significant difference.