Research Paper: Comparison of Attachment Styles, Problem Solving Styles, and Sensitivity Anxiety in Cardiovascular Diseases patients and non-patients

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Abstract

Cardiovascular diseases are regarded as one of the most disabling diseases of human beings around the world, particularly when psychological characteristics are taken into consideration. This study compared attachment styles, problem solving styles and sensitivity anxiety in cardiovascular diseases patients and normal Individuals. A total of 40 participants (20 diseased, 20 normal) were selected thought random cluster sampling procedure from among a population of cardiovascular diseases in the city of Ardabil. Data were collected using the attachment styles inventory (AAI), problem-solving styles questionnaire (PSSQ) and the anxiety sensitivity index (ASI); moreover, multivariate analysis of variance used for data analysis. These finding implied that among attachment styles, problem solving and sensitivity anxiety there existed differences in cardiovascular diseases patients and non-patients. Results showed that cardiovascular diseases patients used higher avoidance and ambivalence attachment than non-patients. Result also revealed that non-patients used higher safety attachment than cardiovascular disease patients and patients employed avoidant attachment style as well as ambivalence. Moreover, cardiovascular diseases patients had higher helplessness, problem solving control and avoidance style more than non-patients and the non-patients used higher creativity style, problem-solving confidence, avoidance style more than cardiovascular diseases patients. It was also found that cardiovascular diseases patients used higher physical, cognitive, social worries than non-patients. Overall, the finding indicated that attachment styles, problem solving styles and sensitivity anxiety were important components discriminating cardiovascular diseases patients from non-patients. The suggestion for further studies is about other variables in cardiovascular diseases to provide preventive strategies for these diseases.

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1. Introduction

Cardiovascular diseases, one of the leading causes of death and disability worldwide, account for one-third of all deaths (WHO, 2007). Chronic diseases have increased as life expectancy is increasing, with heart disease deaths reaching more than 25% by the end of the twentieth century; by 2025, it is estimated that heart disease will account for more than 35% to 60% of all deaths and as a result of the change in human lifestyle, non-communicable diseases are now the leading cause of death. Cardiovascular diseases occur for a variety of reasons such as cholesterol, diet, family history, blood pressure, obesity, lack of physical involvement, stress, and smoking; these are risk factors for this disease. Chronic life stress, anxiety, and depression also increase the risk of heart disease. Men are more at risk for heart disease than women. Some other influential factors such as gender, age, and family history are not changeable (Rosanoff & Seelig, 2004). Among the important psychological factors are attachment, problem-solving, and anxiety sensitivity, which will be thoroughly discussed.

Adult attachment refers to ways of experiencing attachment relationships in adulthood. Hazan and Shaver (1987) restored Anisworth's infant attachment patterns to adult attachment patterns. The three types of adult attachment styles are safety, avoidant, and anxious-ambivalent attachments (Soleimani, 2009).

The process of problem-solving is cognitive-behavioral and innovative; it identifies or develops effective, adaptive strategies for resolving everyday problems (Cassidy & Long, 1996). Nezu (1987 as cited in Cassidy & Long, 1996) introduces six styles of problem-solving: creative, trust, tendency, helplessness, restraint (control), and avoidance.

Anxiety sensitivity is a basis of individual differences in which a person is afraid of physical symptoms associated with anxious arousal (increased heart rate, shortness of breath, dizziness), and it is believed that these symptoms, could have potentially harmful social, cognitive, and physical consequences (Deacon et al., 2003). Anxiety sensitivity might be considered as a risk factor for anxiety problems (Zvolensky et al., 2006). Izadi tameh et al. (2014) in a study examined the relationship between attachment styles with self-efficacy and self-care in patients with type 2 diabetes. In this descriptive-analytical study, 200 diabetic patients were studied. The results revealed that there was a significant correlation between different styles of attachment (safety, avoidant, and ambivalent) with the level of self-efficacy and self-care of diabetes at a significant level. Behrouz et al. (2013) compared the personality and problem-solving styles of patients with coronary heart disease, chronic low back pain, and non-patients in a study. Their findings illustrated that the personality dimensions of neuroticism and psychosis were negatively correlated with healthy problem-solving styles (creative, trust, and tendency) and positively correlated with unhealthy styles (avoidance, helplessness, and control). In a study entitled comparison of anxiety sensitivity and happiness of patients with irritable bowel syndrome (IBS) with non-patients in Shiraz, Ghasemim (2012) concluded that IBS patients suffer from more anxiety sensitivity than their non-patient peers.

Given that no research has been done in this field on cardiovascular patients, the

main question that arises is: Is there a contrast between cardiovascular patients and non-patients in terms of attachment styles, problem-solving styles, and anxiety sensitivity?

2. Method

The present research was a scientific-comparative study. Regarding choosing methodology and variables, the independent variable had occurred before; therefore, its effect on the dependent variable was examined. all cardiovascular patients admitted to Ardabil hospitals with an age range of 15-65, having both secondary and higher education were considered. Among all cardiovascular patient in the age range 15-65 years, 20 cardiovascular patients referred to three out of seven Ardabil hospitals were chosen randomly as the participants of the study based on a multi-stage cluster sampling method. From the families of selected patients, 20 healthy individuals who had no history of cardiovascular disease in the previous years were selected as the control group. Adult attachment style questionnaire, problem-solving style questionnaire, and revised anxiety sensitivity index were used for data collection.

Attachment Style Questionnaire*:* This is presented by Hazan and Shiver (1987) and has 15 questions that measure the three styles of safety attachment, avoidance, and ambivalence on a five-Likert scale ranging from (very low = 1, very high = 5). The minimum and maximum scores of the participants in the test subscales are 5 and 25, respectively. Hazan and Shaver (1987) reported the reliability of the total retest of this questionnaire as 81% and reliability of Cronbach's alpha as 78%. In the present

study, Cronbach's alpha of this questionnaire was 0.85.

Problem Solving Style Questionnaire: This questionnaire was developed by Cassidy and Long (1996) with two steps and has 24 questions (with subjective "yes/no" questions) that measure 6 factors and each factor includes 4 test items. These factors include helplessness, problem-solving control, creative problem-solving style, problem-solving confidence, avoidance style, and approach style. It is worth mentioning that the sum of these scores represents the total score of each. Any factor with the highest score indicates that the person uses that method when facing problems. The calculated reliability of this instrument's subscale by Cronbach's alpha coefficient was reported as 0.37 to 0.72. Cronbach's alpha coefficient was 0.80 in the present study.

Anxiety Sensitivity Index (ASI): The Revised Anxiety Sensitivity Questionnaire is a 16-item questionnaire developed by Reiss et al. (1986). This questionnaire is located on a 5-point Likert scale from 0 to 4. Magnitude of fear is an anxiety symptom marked with high score. The range of scores are between 0 and 64. As each of these items suggested, anxious emotions can be unpleasant and have the potential for traumatic consequences (Floyd et al., 2005). Physical concerns, mental incapacitation concerns, and social concerns are examined in this questionnaire. The psychometric properties of this scale indicate it has high internal stability, with an alpha value between 0.8 and 0.9. The validity of retest after 2 weeks was 0.75 and has been 0.71 for 3 years, showing that ASI is a stable personality structure. (Reiss et al., 1986). Cronbach's

alpha coefficient was 0.76 in the present study.

3. Results

The mean and standard deviation of age in this study were 32.70 and 0.71, respectively, in the age range 25-41 years. 47.5% (19 participants) were female and 52.5% (21 participants) were male. 40% (16) were single and 60% (24) were married. 30% of people (12 people) had a

middle school diploma, 40% (16 people) had a diploma, 15% (6 people) had an undergraduate's degree and 15% (6 people) had a bachelor's degree. Moreover, in this study, the mean and standard deviation of the history of the disease were 2.90 and 0.30, respectively, with a range of 1-6. The study variable means and standard deviations are shown in Table 1 for each of the groups and altogether.

Table 1

Mean and standard deviation of attachment, problem-solving, and anxiety sensitivity components in cardiovascular patients and non-patients

Variable	Patients		non-patients		General	
	SD	M	SD	M	SD	M
Avoidance	1.27	15.40	1.71	13.00	1.92	14.20
Safety	1.04	11.40	1.31	16.05	2.63	13.72
Ambivalent	1.09	14.55	1.68	12.25	1.82	13.40
Helplessness	0.51	2.45	0.97	1.30	0.96	1.87
Control	0.60	1.50	0.76	2.80	0.94	2.15
Creative	0.85	1.90	0.59	3.60	1.12	2.75
Confidence	0.78	2.10	1.16	2.75	1.03	2.42
Avoidance	0.81	3.35	0.59	1.40	1.21	2.37
Approach	0.36	2.85	0.78	2.10	0.71	2.47
Social concerns	1.60	15.50	3.72	8.05	4.71	11.77
Mental incapacitation concerns	1.80	12.70	3.81	7.55	3.98	10.12
Physical concerns	1.70	13.55	2.65	9.00	3.18	11.27

The results of Table 1 illustrated that the average use of avoidance and ambivalent styles were higher in the patient group than in the non-patient group, while the use of safety styles was higher in the non-patient group. Additionally, the problem-solving styles of helplessness, avoidance, and approach were greater among the patient group compared to the other group. The average use of creative problem-solving style, problem solving control, and problem-solving confidence was higher in the non-patient group. In addition, the averages of physical, mental incapacitation,

and social concerns in the non-patient group were higher than the patient group.

To select the most appropriate statistical test to compare patient and non-patient groups, the status of the studied variables was examined and it was found that each of the research variables (attachment styles, problem-solving styles, and anxiety sensitivity) had a normal distribution (indices of skewness and elongation of dependent variables were between ±1). On the other hand, missing or unrelated data were not observed in any of the dependent variables. Additionally, the correlation

between two variables and possible pairs of variables was between 0.30 and 0.42. According to the described conditions, a multivariate analysis of variance was the most appropriate statistical procedure for comparing the investigated groups. Before considering the results of the multivariate analysis of variance, the homogeneity of

covariance assumption was checked by the M-box test and it was found that the covariance matrix was homogeneous (P >0.05).

A multivariate analysis of variance test used to compare the patient and non-patient groups is shown in Table 2.

Table 2

Summary of the results of multivariate analysis of variance to compare patient and non-patient groups

Variable	Value	F	Hypothesis df	error df	Sig.	Partial Eta Squared
Pillay trace	0.947	39.95	12	27	0.000	0.94
Wilks` lambda	0.053	39.95	12	27	0.000	0.94
Hotelings trace	17.75	39.95	12	27	0.000	0.94
Roy's Largest Root	17.75	39.95	12	27	0.000	0.94

The results of Table 2 highlighted that there was a significant difference between the two groups of cardiovascular patients and non-patients in terms of the combination of dependent variables (P <0.01, F = 39.95, Wilkes lambda = 0.053). A significant difference could thus be seen between the studied groups in terms of at least one of the dependent variables.

To investigate the univariate differences

in the study groups, first, the homogeneity of variance of each of the components of attachment, problem-solving, and anxiety sensitivity was examined using the Levin test. It was found that in each of the variables (components), the variances were homogeneous. (P >0.05)

In Table 3, the results of the univariate analysis of variance tests on each of the research variables are compared.

Table 3

Results of univariate analysis of variance of attachment, problem-solving, and anxiety sensitivity components in cardiovascular patients and non-patients

The dependent variable	SS	df	MS	F	Sig.	Eta Squared
Avoidance	57.60	1	15.60	25.21	0.000	0.39
Safety	216.25	1	216.25	152.86	0.000	0.80
Ambivalent	52.90	1	52.90	26.20	0.000	0.40
Helplessness	13.22	1	13.22	21.70	0.000	0.36
Control	16.90	1	16.90	35.28	0.000	0.48
Creative	28.90	1	28.90	53.31	0.000	0.58
Confidence	24.22	1	24.22	24.27	0.000	0.40
Avoidance	38.02	1	38.02	74.67	0.000	0.66
Approach	5.62	1	5.62	14.89	0.000	0.28
Social concerns	555.02	1	555.02	67.61	0.000	0.64
Mental incapacitation concerns	265.22	1	265.22	29.71	0.000	0.43
Physical concerns	507.02	1	207.02	41.63	0.000	0.52

The results of Table 3 demonstrated that avoidant, safety and ambivalent attachment were different in patients and non-patients: $(F_{s(1\&38)}=25.21,152.26,86.20:P_s0<0.01)$. Likewise, helplessness, restraint, creativity, trust, avoidance and the tendency in patients as well as non-patients were different: $(F_{s(1\&38)=}21.35,70.53,28.24,31.7427.14,67.89: P_s<0.01)$; Physical, cognitive, and social anxieties also varied in patients and non-patients:$(F_{s(1\&38)}=67.29,61.41,71.63: P_s<0.01)$.

4. Discussion

The results of the present study indicated that cardiovascular patients and non-patients used avoidant attachment styles differently and that cardiovascular patients used avoidant attachment styles more than non-patients. In a similar study on asthmatic patients, Fraley et al. (2000) concluded that there was a difference between avoidant attachment style in asthmatic patients and non-asthmatic individuals the results of which are consistent with the present study's. There was a positive relationship between avoidant attachment style and physical as well as mental illness symptoms (Mikulincer et al, 1999). In the present study, the results revealed that safety attachment styles showed the difference among cardiovascular patients and non-patients; additionally, non-patients adopted more safety attachment styles than cardiovascular patients. These results are in line with the findings of Mikulincer and Nachshon (1991). Mikulincer and Nachshon (1991) discovered that people with a safety attachment style were more competent in the workplace and social environment, enjoying better mental health. According to the present study's results, cardiovascular patients and non-patients had different ambivalent attachment styles and cardiovascular patients adopted ambivalent attachment styles more frequently than non-patients. These results correlate favorably with the Cassibba et al.

(2004) who further supported the idea that there was a positive relationship between ambivalent unsafe attachment style and the incidence of diseases. Thus the more ambivalent a person's attachment style is, the more likely he or she is to develop the disease (Cassibba et al., 2004).

The results highlighted that the problem-solving style of helplessness was different in cardiovascular patients and non-patients and cardiovascular patients used more helplessness problem-solving style than non-patients. The present study's results corroborate with Abdi's (2001) research. In a similar study on addicted patients and non-patient people, Abdi (2001) concluded that there was a significant difference between these two groups in the use of problem-solving styles. The results demonstrated that the problem-solving control was different in cardiovascular patients as well as non-patients and non-patients adopted the problem-solving control more than cardiovascular patients. These results are consistent with Abdi's (2001) research findings. This substantiates previous findings in the literature (Ball, 1998; Smith & Washousky, 1995). When a patient applies this type of problem-solving style, he or she pays more attention to how to manage influential external and internal factors. The results indicated that creative problem-solving style was different in cardiovascular patients and non-patients and non-patients adopted more creative problem-solving style than cardiovascular patients. These results are consistent with Abdi's (2001) research. These findings lend support to the previous findings in literature (Ball, 1998; Smith & Washousky, 1995). The results highlighted that the problem-solving confidence was different in cardiovascular patients and non-patients

and non-patients adopted the problem-solving confidence more than cardiovascular patients. These results confirm Abdi's (2001) research and are in good agreement with (Ball, 1998; Smith & Washousky, 1995); The results of the present study illustrated that the avoidance problem-solving style was different in cardiovascular patients and non-patients and cardiovascular patients more than non-patients adopted avoidance problem-solving. This fits well with (Abdi, 200; Ball, 1998; Smith & Washousky, 1995). The results of investigating the relationship between problem solving, conflict resolution, and psychological health among students (Babapour kheiredin, 2002). Babapour kheiredin (2002) revealed that using such a problem-solving style, patients give up any effort and become passive and indifferent instead of thinking about their problems. The results of the present study illustrated that the problem-solving approach was different in cardiovascular patients and non-patients and non-patients' problem-solving style approach was higher than cardiovascular patients. This is in complete agreement with Abdi's (2001) study which highlighted that there was a significant difference between addicted patients and non-patients regarding problem-solving styles. These results are also consistent with other studies in literature (Abdi, 2001; Smith & Washousky, 1995).

The results demonstrated that physical concerns were different in cardiovascular patients and non-patients and cardiovascular patients had more physical concerns than non-patients. This study is in good agreement with Deacon and Abramowitz's (2006) research which highlighted that there was a significant

difference between anxiety patients and normal people when it comes to anxiety sensitivity. The results show that mental incapacitation concerns revealed the difference between cardiovascular patients and non-patients and that cardiovascular patients were more likely to have mental incapacitation concerns. These results are consistent with Anderson and Hope's (2009) research showing that there was a significant difference between anxiety patients and non-patients in terms of anxiety sensitivity; moreover, anxiety patients experienced more anxiety sensitivity and cognitive arousal. Anxiety sensitivity created a kind of cognitive bias concerning threatening stimuli increasing paying attention to related threatening stimuli which in turn increased the level of stimulation of perceived internal or external stimuli (Anderson & Hope, 2009). Researchers found that social concerns were different in cardiovascular patients and non-patients and that cardiovascular patients have higher social concerns than non-patients. These results are in good agreement with research by Rector et al. (2007). They expressed that there was a significant difference between anxiety patients and non-patients in terms of anxiety sensitivity so that anxiety patients experienced more anxiety sensitivity (Rector et al., 2007).

5. Conclusion

As the present study concentrated on cardiovascular patients in the city of Ardabil, the scope of generalization of the results of the research was limited. Moreover, methodological limitations included the inaccessibility to the participants; therefore, it was hard to find a sample. It was suggested that the present study be conducted in other cities to promote the generalizability of the results; additionally, other variables related to cardiovascular disease should get investigated and examined, such as personality traits, socioeconomic status, problems, and adverse life experiences. The results of the present study suggested that more attention need to be paid to attachment styles, problem-solving, and anxiety sensitivity and its consequences. Therefore, cardiovascular patients and non-patients should be informed about these issues. n addition, officials at health centers and hospitals as well as families, should hold meetings to improve attachment styles, problem-solving, and anxiety sensitivity and professionals should focus more on preventive measures as soon as possible without incurring financial or psychological damage to the patients. University, school, family counseling center, health center workshops, conferences, and specialized meetings are recommended as a method of increasing awareness, enhancing skills and improving attachments, problem-solving, as well as anxiety sensitivity.

Acknowledgment

Conflict of interests

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