Comparing Early Maladaptive Schemata in Cardiac Patients and Healthy Individuals

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A B S T R A C T

The aim of the present study is to Comparing Early Maladaptive Schemata in the heart patients and healthy individuals. In this study, it has been used a causal-comparative method, the case-control study which was retrospective cohort study. Therefore, 60 individuals have selected randomly (30 the heart patient, 30 healthy individual) from visitors to the Imam Khomeini hospital and clinic of specialized doctors in the year 2011 by using the available sampling method and Comparing Early Maladaptive Schemata' tests of yang (1999) were implemented on them. In this study, healthy individuals have reviewed and compared in terms of age and sex, which they matched in the same conditions with patients. The research's data has analyzed systematically by multivariate variance analysis statistical methods and regression analysis. Results of the data suggest that in patients with heart disease since the early maladaptive schemas emotional deprivation, vulnerability to harm or illness dependency/incompetence - Break - restraint and self-discipline inadequate heart disease than people healthy more. Since the early maladaptive schemas variety of vulnerability to a variety of physical diseases that can be created with the appropriate schema approach in the prevention, diagnosis and treatment of psychological disorders used.

Keywords: heart disease, healthy individuals, Early Maladaptive Schemata.

INTRODUCTION

Cardiovascular disease is one of the most common causes of disabilities and death in adults (Vaterav et al. 2004). There is a variety of heart diseases and in the past few years, evidence has shown that there is an association between psychological factors and heart diseases and their progression (Zahed, 2009). Any kind of damage to the blood vessels that narrow blood vessels and reduce the blood flow to the heart muscle, one of the most important causes of which is the atherosclerosis on the arterial wall (Harrison, 2005) which is also considered as one of the three main causes of death, along with cancer and apoplexy. Numerous social and mental factors have been mentioned which are associated with heart disease. It is believed that these factors increase the risk of being diagnosed with a heart disease. Among these factors, stressful psychological factors play a significant role in the creation, aggravation and continuation of this disease. Yung (1950) called the schemata that lead to the development of psychological problems early maladaptive schemata. These schemata are like self-harming cognitive and emotional patterns that are started with the early current of growth and continue throughout one's life.

Yung believes that early maladaptive schemata is the deep and strong beliefs of a person about himself/herself and about the world and is the outcome of the early years of life. These schemata give us information about ourselves and about the world, they tell us how we are, how the world is (Yung and Klaskoshiar, 2003). Yung (1950) called the schemata that lead to the development of psychological problems early maladaptive schemata. He believes that these schemata refer to self-continuative patterns of memories, emotions, cognition, senses and perceptions that guide human behavior. They are constant and long-term issues that are created in childhood and continue in adulthood and are, to some extent, inefficient (Yung, 1999; Yung and

Klaskoshiar, 2003). The results obtained from the study of Sariah et al (2010) showed that cardiac patients might suffer from the early maladaptive schemata and their impact on the condition of improvement of pain and probably a reflect of multiple early emotional behaviors. All living creatures react to threat in three ways: starting a battle, escaping or staying put because of shock. These three reactions comply with the following three coping styles: overcompensate, avoid and surrender. When the patients surrender to the schema, they don't try to fight it or avoid it, rather, they accept that the schema is right. When the patients encounter the factors that evoke the schema, they show improper emotional responses. When the patients use the avoidant coping style, they try to avoid the activation of the schema at any cost. Research findings show that avoidance is a predictor of the heart diseases. In overcompensation, the patients try to be as different as they can from their childhood which is the time of formation of the schema. This can be considered as a healthy effort that is made against the schema which unfortunately leads to continuation instead of improvement (Yung, 2007).

In his investigation about the early maladaptive schemata and psychopathological symptoms, Shahamat (2004) found out that there is a significant relationship between somatic symptoms and the maladaptive schemata of dependency/incompetence. The study conducted by Lotfi (2006) on the interaction between negative incidents and mental pressures of life, it was concluded that when the early maladaptive schemata are activated, levels of emotions are released which, directly or indirectly, lead to various forms of cognitive distress such as depression, anxiety, occupational disability, lack of academic achievement and interpersonal conflicts. In another study (conducted by Pascal, Kristin and Jane, 2008; cited by Yusefi, 2010), it was concluded that schemata give our interpretation of different incidents orientation and these orientations show themselves as misunderstanding, distorted attitudes, false assumptions of goals and unrealistic expectations of oneself in interpersonal psychopathology. In a study, Steelgro and Pokoroni (2001) attempted to cure the schemata and the emotions following them through guided imagery and concluded that reductions were seen in various symptoms as a result of the treatment. Hafarto Secton (2001), in their study, came to the conclusion that a schema-focused treatment can effective reduce symptoms of anxiety, depression, rage and sadness. Morris (2006) argued that when maladaptive schemata are activated, individuals usually experience high levels of emotions such as rage, anxiety, sorrow or guilt.

In a study conducted by Sariah et al. (2010) on 271 cardiac patients, the objective was to review early maladaptive schemata and behaviors that promote them in cardiac patients and to investigate the association between the schemata and variables in order answer this question: can early maladaptive schemata predict pain or debilitating pain? They concluded that more than 58.3 of cardiac patients obtained high scores in Yung's schema questionnaire and showed high levels of intensity and duration of pain or debilitating pain in association with the purposefulness of the eas. Analyses have shown that presence of the selflessness schema in women and absence of an emotional schema in all of the examples of the debilitating pains are associated with the intensity of this kind of pain. The results obtained from the aforementioned study proposes a considerable suggestion about the pain experienced by cardiac patients who might suffer from the effect of the early maladaptive schemata on pain improvement and probably from basic reflection of multiple early emotional behaviors. Mans et al. (2010) conducted a study and reviewed the power of the early maladaptive schemata in association with the relationship between the dimensions of anxiety and attachment and psychopathological symptoms. According to their results, the relationship between attachment anxiety and psychopathology is completely mediated by cognitions, especially by rejection and exclusion and self-orientation. In the studies conducted by Kermira et al. (2010), when five domains of exclusion, rejection/autonomy, impaired performance, impaired limits, other orientations and excessive vigilance/inhibition are activated, the perception and the reality might be affected and a cognitive distortion might be created and these schemata would lead to the orientation of cognitive processing methods and vulnerability to mental and physical distresses.

Research Methodology and Research Design Type
A – Research Methodology:

This study was a casual-comparative and a kind of case-control study, which has done retrospectively. In this study, the purpose is the probability or possibility of cause and effect relationships between variables by using an accurate evaluation of the achieved results and data is based on the finding of casual variables (Delavar, 2002). In this present study, it has considered that the group with two levels (patient and healthy individuals) is as the independent variable and coping styles are as the dependent variables.

Statistical Society, Sample, and Sampling Method:

The Statistical Society of this study has formed all the patients with heart diseases (woman and man), referring to Imam Khomeini Hospital and the clinic of the physicians in the city of Ardabil in the years 2010-2011, which their numbers are almost 3250 individuals. Healthy individuals' community includes staffs and caregivers of patients matched with demographic characteristics (gender). The statistical Society has recommended in casual-comparison method at least 15 individual for each group and in the correlation method at least 30 individual (Delavar, 2006). Due to environmental factors and control of troublesome variables, the sample size has considered 60 individuals (30 individuals of heart disease and 30 healthy individuals). In the present study, the sampling method is available. In this study, it has tried that the healthy individuals who have compared

and reviewed with heart patients in terms of age, sex, and occupation matched in terms of heart patients. The aim of the study has explained to these individuals.

B. Data Collection Methodology:

In order to collect data after coordinating, they referred to Imam Khomeini hospital in the heart sector and clinics of the related physicians to heart diseases and after doctor's diagnosis to being sick, the questionnaires were given to them, then they have been collected after filling out a questionnaire by heart patients and healthy groups. After collecting and entering data into the computer, the data was analyzed statistically.

C – Data Collection Tools:
Questionnaire of coping methods:

The questionnaire of coping ways has provided by Lazarus and Folekman (1985) consists of 65 articles, which measures eight problem solving and emotional centered methods. This octet pattern is divided into the two groups of problem solving methods (searching social supports, accountability, the planned problem solving and positive reappraisal) and emotional centered (confrontation, refrain, scape and avoid and continence) (Lazarus, 1985). The respondents' answer to the questions of this questionnaire were selecting one of the four options «I did not use», «I somewhat used», « I often used », and "I used much". These options get scores respectively 0,1,2,3. Lazarus and Folekman have reported the internal consistency coefficient 0.66 to 0.79 for each coping methods. In the study of Dejhkam et al, the cronbach's alpha coefficient has reported 0.61 to 0.79 and correlation coefficient was between the scales of this questionnaire, which has gained from 0.1 to 0.39.

c- The schema questionnaire:

The short form of Yung's Early Maladaptive Schemata Questionnaire (Elaheh Haghighat Manesh, 2010) (YSQ-SF):

This questionnaire has 75 questions which have been designed by Yung and Brown (1994, cited by Barazandeh, 2005) with the purpose of measuring 17 early maladaptive schemata. The reliability of this questionnaire was increased for 76% to 93% for all schemata using Cronbach's alpha. The results obtained from the factor analysis also supports the internal structure of the questionnaire (Welbern et al. 2002, cited by Barazandeh, 2005). Fatehizadeh and Abasian (2003, cited by Barazandeh, 2005) also measured its reliability using Cronbach's alpha and found out that it is 94% reliable and used the correlation with the Illogical Belief test (IBT) method and measured to be 34% valid.

D- Data Analysis Methodology:

In order to analyze data, they used descriptive and inferential statistics according to the available hypothesis and variables. In order to describe the data, they used descriptive statistics (average and standard deviation, etc…). In order to analyze the hypothesis of the study, they used multivariate variance analysis (MANOVA).

Demographic findings

Table 1. distribution of frequency and percentage of gender in healthy individuals and cardiac patients

| | | Healthy individuals | | Cardiac patients | |
		Frequency	Percentage	Frequency	Percentage
	Male	30	50	30	50
Gender	Female	30	50	30	50
	Total	60	100	60	100

As it can be seen in table 1, 50% of the healthy individuals are male and the other 50% are female. In addition, 50% of cardiac patients are male and the other 50% are female.

Table 2. distribution of frequency and percentage of smoking cigarettes in healthy individuals and cardiac patients

| | | Healthy individuals | | Cardiac patients | |
		Frequency	Percentage	Frequency	Percentage
Smoking cigarettes	Yes	1	3.33	8	26.66
	No	29	96.66	22	73.33
	Total	30	100	30	100

As it can be seen in table 2, 3.33% of healthy individuals and 26.66% of the cardiac patients smoke and 96.66% of healthy individuals and 73.33% of cardiac patients don't smoke cigarettes.

Descriptive findings:

Table 3. mean and standard deviation of five domains of the early maladaptive schemata in healthy individuals and cardiac patients

	Healthy individuals		Cardiac patients	
	Mean	Standard deviation	Mean	Standard deviation
Rejection and exclusion	2.26	0.54	2.40	0.94
Impaired performance and autonomy	21.96	0.75	2.41	0.99
Impaired limits	3.00	0.81	3.02	1.10
Other orientations	2.19	0.53	2.04	0.71
Too much vigilance	1.54	0.44	1.66	0.50

Table 4. mean and standard deviation of the early maladaptive schemata in healthy individuals and cardiac patients

	Healthy individuals		Cardiac patients	
Variable	Mean	Standard deviation	Mean	Standard deviation
Emotional deprivation	2.29	0.81	3.02	1.41
Abandonment	2.60	1.07	2.82	1.23
Distrustfulness and misbehavior	2.72	1.24	2.32	1.34
Social isolation – alienation	1.98	0.83	1.98	1.11
Imperfection – shame	1.70	0.74	1.84	0.91
Entitlement – nobleness	3.48	1.03	3.44	1.35
Inadequate self-discipline – self-possession	2.67	0.93	3.20	1.18
Obedience	2.05	0.94	2.32	1.22
Sacrifice	3.96	1.26	3.72	1.26
Emotional inhibition	2.61	1.03	2.72	1.09
Extreme reproach – strict standards	3.96	1.12	3.42	1.32
Dependency	1.73	0.91	2.02	1.02
Vulnerability	2.15	1.11	2.80	1.46
Struggling	1.90	2.20	2.20	1.33
Failure	2.05	2.64	2.64	1.24

In the respect of determining the inefficient schemata in cardiac patients, in the study of Nodal et al. (2005), if a schema has a mean higher than 3 in any domain and any subscale, it would be considered as an inefficient schema. The information presented in the table show that the significant maladaptive schemata in cardiac patients are: emotional deprivation, entitlement-nobleness, sacrifice, and strict standards-extreme reproach.

Inferential findings
There is a difference between the rejection and exclusion schemata in cardiac patients and healthy individuals.
1. There is a difference between the instability/abandonment schemata in cardiac patients and healthy individuals.
2. There is a difference between the distrustfulness/misbehavior schemata in cardiac patients and healthy individuals.
3. There is a difference between the emotional deprivation schemata in cardiac patients and healthy individuals.
4. There is a difference between the imperfection/shame schemata in cardiac patients and healthy individuals.
5. There is a difference between the social isolation/misbehavior schemata in cardiac patients and healthy individuals.

Table 5. the box test for the mean of the early maladaptive schemata

Index	Value
Box	237.316
F	1.429
DF1	120
DF2	10429.613
Significance level	0.002

According to table 5, the box test is significant. In other words, the difference between the covariance is significant.

Table 6. the results of Levine test of the early maladaptive schemata in healthy individuals and cardiac patients

Variables	F	DF1	DF2	Sig
Emotional deprivation	7.090	1	58	0.10
Abandonment	1.587	1	58	0.21
Distrustfulness – misbehavior	0.003	1	58	0.95
Social isolation – alienation	1.213	1	58	0.27
Imperfection – shame	0.385	1	58	0.53
Failure	2.119	1	58	0.15
Dependency – incompetence	0.326	1	58	0.57
Vulnerability to loss and disease	3.349	1	58	0.07
Struggling	3.733	1	58	0.05
Obedience	1.189	1	58	0.28
Sacrifice	0.007	1	58	0.93
Emotional inhibition	0.573	1	58	0.45
Strict standards	0.152	1	58	0.69
Entitlement	0.946	1	58	0.33
Inadequate self-discipline – self-possession	2.540	1	58	0.11

As it can be seen in table 6, the Levine test was not significant. According to the results of the prediction of the homogeneity of variances in the aforementioned variables in the two groups was confirmed. This test was not significant for any of the variables; therefore, parametric tests can be used.

Table 7. information about the validity indicators of the multivariate analysis of variance test in the early maladaptive schemata of rejection and exclusion in healthy individuals and cardiac patients

Name of the test		Value	F	Hypothesis Df	Error Df	P	Eta squared
Model	Pillai's Trace	0.914	115.377	5.000	55.000	0.000	0.914
	Wilks' Lambda	0.86	115.377	5.000	55.000	0.000	0.914
	Hoteling's trace	10.683	115.377	5.000	55.000	0.000	0.914
	Roy's Largest Root	10.683	115.377	5.000	55.000	0.000	0.914
Group	Pillai's Trace	0.199	2.689	5.000	55.000	0.31	0.199
	Wilks' Lambda	0.801	2.689	5.000	55.000	0.31	0.199
	Hoteling's trace	0.249	2.689	5.000	55.000	0.31	0.199
	Roy's Largest Root	0.249	2.689	5.000	55.000	0.31	0.199

As it can be seen in table 7, the significance level of the applicability of the multivariate analysis of variance (Manova) test is acceptable. In addition, these results indicate that there is a significant difference between healthy individuals and cardiac patients in terms of at least one of dependent variables. The Eta Squared showed that the difference between the two groups is overall a significant difference given the dependent variables. In fact, it can be inferred that the early maladaptive schemata of cardiac patients is more significant (19%) that than of healthy individuals. Therefore, it can be said that hypothesis 3 (about emotional deprivation) is confirmed.

1. There is a difference between the impaired performance/autonomy schemata in cardiac patients and healthy individuals.
2. There is a difference between the dependency/incompetence schemata in cardiac patients and healthy individuals.
3. There is a difference between the schema of vulnerability to losses or diseases in cardiac patients and healthy individuals.
4. There is a difference between the schemata of lack of self-development/struggle in cardiac patients and healthy individuals.
5. There is a difference between the failure schema in cardiac patients and healthy individuals.

Table 8. information about the validity indicators of the multivariate analysis of variance test in the early maladaptive schemata of impaired performance and autonomy in cardiac patients and healthy individuals

Name of the test		Value	F	Hypothesis Df	Error Df	P	Eta squared
Model	Pillai's Trace	0.871	92.653	4.000	55.000	0.000	0.871
	Wilks' Lambda	0.129	92.653	4.000	55.000	0.000	0.871
	Hoteling's trace	6.738	92.653	4.000	55.000	0.000	0.871
	Roy's Largest Root	6.738	92.653	4.000	55.000	0.000	0.871
Group	Pillai's Trace	0.082	1.231	5.000	55.000	0.309	0.82
	Wilks' Lambda	0.918	1.231	5.000	55.000	0.309	0.82
	Hoteling's trace	0.090	1.231	5.000	55.000	0.309	0.82
	Roy's Largest Root	0.090	1.231	4.000	55.000	0.309	0.82

As it can be seen in table 8, the significance level of the applicability of the multivariate analysis of variance (Manova) test is acceptable. In addition, these results indicate that there is a significant difference between healthy individuals and cardiac patients in terms of at least one of dependent variables. The Eta Squared showed that the difference between the two groups is overall a significant difference given the dependent variables. In fact, it can be inferred that the early maladaptive schemata of

cardiac patients is more significant (19%) that than of healthy individuals. Therefore, it can be said that hypothesis 3 (about maladaptive schemata of failure and vulnerability to losses and diseases) is confirmed.

1. There is a difference between the impaired limits schemata in cardiac patients and healthy individuals.
2. There is a difference between the entitlement – nobleness schemata in cardiac patients and healthy individuals.
3. There is a difference between the inadequate self-discipline – self-possession schemata in cardiac patients and healthy individuals.

Table 9. information about the validity indicators of the multivariate analysis of variance test in the early maladaptive schemata of impaired limits in cardiac patients and healthy individuals

	Name of the test	Value	F	Hypothesis Df	Error Df	P	Eta squared
Model	Pillai's Trace	0.942	304.230	3	56	0.000	0.942
	Wilks' Lambda	0.058	304.230	3	56	0.000	0.942
	Hoteling's trace	16.298	304.230	3	56	0.000	0.942
	Roy's Largest Root	16.298	304.230	3	56	0.000	0.942
Group	Pillai's Trace	0.080	1.617	3	56	0.196	0.080
	Wilks' Lambda	0.920	1.617	3	56	0.196	0.080
	Hoteling's trace	0.087	1.617	3	56	0.196	0.080
	Roy's Largest Root	0.087	1.617	3	56	0.196	0.080

As it can be seen in table 9, the significance level of the applicability of the multivariate analysis of variance (Manova) test is acceptable. In addition, these results indicate that there is a significant difference between healthy individuals and cardiac patients in terms of at least one of dependent variables. The Eta Squared showed that the difference between the two groups is overall a significant difference given the dependent variables. In fact, it can be inferred that the impaired limits schema of cardiac patients and healthy individuals is significant (with a difference of 80%)

1. There is a difference between the schemata of other orientations in cardiac patients and healthy individuals.
2. There is a difference between the obedience schemata in cardiac patients and healthy individuals.
3. There is a difference between the sacrifice schemata in cardiac patients and healthy individuals.

Table 10. information about the validity indicators of the multivariate analysis of variance test in the early maladaptive schemata of other orientations in cardiac patients and healthy individuals

	Name of the test	Value	F	Hypothesis Df	Error Df	P	Eta squared
Model	Pillai's Trace	0.941	298.885	3	56	0.000	0.941
	Wilks' Lambda	0.059	298.885	3	56	0.000	0.941
	Hoteling's trace	16.0.12	298.885	3	56	0.000	0.941
	Roy's Largest Root	16.0.12	298.885	3	56	0.000	0.941
Group	Pillai's Trace	0.055	1.083	3	56	0.364	0.055
	Wilks' Lambda	0.945	1.083	3	56	0.364	0.055
	Hoteling's trace	0.058	1.083	3	56	0.364	0.055
	Roy's Largest Root	0.058	1.083	3	56	0.364	0.055

As it can be seen in table 10, the significance level of the applicability of the multivariate analysis of variance (Manova) test is acceptable.

1. There is a difference between the schemata of too much vigilance and inhibition in cardiac patients and healthy individuals.
2. There is a difference between the emotional inhibition schemata in cardiac patients and healthy individuals.
3. There is a difference between the strict standards – extreme reproach schemata in cardiac patients and healthy individuals.

Table 11. information about the validity indicators of the multivariate analysis of variance test in the early maladaptive schemata of too vigilance in cardiac patients and healthy individuals

	Name of the test	Value	F	Hypothesis Df	Error Df	P	Eta squared
Model	Pillai's Trace	0.931	253.142	3	56	0.000	0.931
	Wilks' Lambda	0.069	253.142	3	56	0.000	0.931
	Hoteling's trace	13.561	253.142	3	56	0.000	0.931
	Roy's Largest Root	13.561	253.142	3	56	0.000	0.931
Group	Pillai's Trace	0.0213	5.052	3	56	0.000	0.231
	Wilks' Lambda	0.787	5.052	3	56	0.000	0.231
	Hoteling's trace	0.271	5.052	3	56	0.000	0.231
	Roy's Largest Root	0.271	5.052	3	56	0.000	0.231

As it can be seen in table 11, the significance level of the test of extreme vigilance and inhibition using the multivariate analysis of variance (Manova) has been confirmed. In addition, these results indicate that there is a significant difference between healthy individuals and cardiac patients in terms of at least one of dependent variables. The Eta Squared showed that the

difference between the two groups is overall a significant difference given the dependent variables. In fact, it can be inferred that the extreme vigilance and inhibition schemata of cardiac patients and healthy individuals is significant (with a difference of 21%).

Discussion and conclusion:

The most important section of any study is the section of discussion and conclusion. It is clear that any study, in any field, has a specific objective. In explaining the findings, it can be said that there is a close relationship between psychological factors and psychosomatic diseases. Since the schemata form the self-concept of individuals, if it is a maladaptive one, it would make the individuals more vulnerable to emotional issues, mental distress and inefficient cognition.

The following results were obtained based on the research findings:

- Hypothesis: There is a difference between the instability/abandonment schemata in cardiac patients and healthy individuals. The results in this field showed that the maladaptive schema of emotional deprivation is significantly different from the other components of the early maladaptive schemata of rejection and exclusion. Given that, statistically, the maladaptive schemata of abandonment – instability, distrustfulness – misbehavior, social isolation – alienation and imperfection – shame are not significant, and the mean of cardiac diseases in these domains is high, it can be concluded that cardiac patients use these schemata way more than healthy individuals. In this regard, it can also be argued that patients who use these schemata often feel that their needs are not being fulfilled by others, including their families and they are not emotionally supported or empathized with and no one understands their feelings.

- Hypothesis: There is a difference between the impaired performance and autonomy schemata in cardiac patients and healthy individuals.

The results indicate that there is a significant difference between the schema of vulnerability to loss and disease, lack of self-development, struggling and failure in cardiac patients relative to healthy individuals. Given that the mean of the schema of vulnerability to loss and disease, dependency/incompetence, failure, and struggle is higher in cardiac patients than in healthy individuals, these patients use these schemata way more than healthy individuals. In this respect, according to the obtained results, there is no significant relationship between the dependency/incompetence schema in healthy individuals and cardiac patients. Patients who use the schema of vulnerability to loss and disease, are extremely fearful that something awful is going to happen at any moment which cannot be prevented or stopped by that certain individual. An example of such extreme fears is the fear of being diagnosed with cardiac diseases. Moreover, patients who use the schema of lack of self-development/struggle feel that their essence has been combined with others and that they don't have a unique identity and this feeling usually shows itself in the individual structure and essence as a feeling of emptiness, confusion, lack of purpose or direction and in more severe cases, as doubt. Patients who use the failure schema usually feel incompetence and believe that they have failed and they don't deserve anything and are less successful than others. In this respect, according to the obtained results, there is no significant relationship between the dependency/incompetence schema in healthy individuals and cardiac patients.

- Hypothesis: There is a difference between the scheme of impaired limits in cardiac patients and healthy individuals.

According to the findings, there is a significant difference between healthy individuals and cardiac patients in terms of the inadequate self-discipline – self-possession schemata. According to the research findings, the mean of the score of the entitlement – nobleness schema obtained by healthy individuals is higher, thus, it can be concluded that the healthy individuals use this schema more than cardiac patients. Patients who use the inadequate self-discipline – self-possession schemata cannot tolerate pain and run from any responsibility. These factors prevent the individual from being satisfied with himself/herself, from committing, and from having personality integrity.

- Hypothesis: There is a difference between the scheme of other orientations in cardiac patients and healthy individuals.

According to the findings, there is no significant difference between healthy individuals and cardiac patients in terms of the components of the schema of other orientations measured by Yung's questionnaire. Given that, statistically, the maladaptive schemata of sacrifice and obedience are not significant, by considering the mean difference, cardiac patients use the obedience schema more than healthy individuals.

Patients who use the obedience schemata feel obligated to excessively give themselves to others which is usually in order to avoid violence, deprivation or vengeance. This schema, in general, leads to a rage that is shown in a set of maladaptive signs including passive-aggressive behaviors, uncontrolled emotional outbursts, psychosomatic signs, withdrawal of affection, outflow and drug abuse.

According to the findings, both extreme vigilance and emotional inhibition (schemata of emotional inhibition and strict standards/extreme reproach), which have been measured in Yung's questionnaire, are not significantly different in healthy people or those suffering from heart disease. Given that the mean score of the emotional inhibition is higher in cardiac patients than healthy individuals, therefore, these patients use this schema more than healthy individuals. Moreover, the mean score of strict standards is higher in healthy individuals than cardiac patients, therefore, these patients use this schema less than healthy individuals.

Individuals who use the emotional inhibition schema, excessively withhold their actions, feeling and spontaneous communication usually in order to avoid being excluded by others, feeling shameful, losing control and personal impulses. The basic belief of those who use the strict standards schema is that one needs to make so much effort in order to reach the ambitious standards about their own behavior and performance which is usually with the purpose of avoiding criticism.

What are the dominant schemata of cardiac patients?

The findings of the research show that the maladaptive schemata of emotional deprivation, entitlement – nobleness, sacrifice and strict standards/extreme reproach are of more significance for the cardiac patients than for healthy individuals.

The findings of the present study and other findings associated with individuals who suffer from cardiac diseases show that these individuals tend to cardiac diseases by one of the following factors: suppression of emotions, being passive or unable to express or fulfill their personal needs, being worried that something is wrong with themselves or with others, not being able to succeed and other relevant features.

Considering the fact that heart disease is a life-threatening disease in today's societies and being diagnosed with this disease might put the economic well-being of the patient at risk because of the high costs of health care and treatment, the patient might also suffer from mental and psychological problems because of his/her diagnosis. Thus, the psychological factors associated with heart disease in the mental and emotional health of the patients must be studied. Therefore, by reviewing this research, the environmental and psychological factors associated with heart disease, that either create it or intervene, including coping styles and explanatory styles of individuals in various life situations and the early maladaptive schemata must be taken into consideration in order to improve the health of healthy individuals and cardiac patients.

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