Original Article

Comparison of Acceptanc and Commitment Therapy and Schema Therapy in Heart Patients

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ABSTRACT

Heart disease, including myocardial infarction, is one of the most common diagnoses in hospitalized patients, with a mortality rate of about 30% of patients. This research aimed to compare the effect of acceptance and commitment therapy and schema therapy on negative emotions and resilience in heart patients. The research method was quasi-experimental with pre-test-post-test, two experimental groups, and a control group. The statistical population included all heart patients referred to the Nuclear Medicine Center in 2018 in Tehran, 3548 people who referred for diagnostic examinations and cardiac scans. By random sampling, we selected the research sample with a size of 45 people (15 people in the training group of acceptance and commitment therapy, 15 people in the schema therapy training group, and 15 people in the control group). To collect research data, we used the questionnaires of Connor and Davidson standard resilience (2003) and Garnefski and Craaij cognitive emotion regulation (2006). After performing the pre-test for all three groups, we performed Therapeutic intervention for the experimental groups using the protocol of Acceptance and commitment therapy in 12 sessions (1 session per week for 2 hours) and the schema therapy protocol in 10 sessions (1 session per week for 2 hours). After the intervention, a post-test was performed for all three groups. The results showed that therapeutic interventions had an effect on resilience and negative emotions in heart patients, but the effect of Acceptance and commitment therapy on resilience and negative emotions in heart patients has been more than schema therapy training.

Keywords: Resilience, Acceptance and Commitment Therapy, Schema Therapy, Negative Emotions

Introduction

Coronary heart disease is a health problem and one of the leading causes of death in the world. The disease affects not only the health of patients but also their social relationships, lifestyle, family environment, occupation, and income level. Coronary heart disease has many pathological effects on various aspects of physical, mental, social, and spiritual health [1]. Certain physical factors such as age, heredity, family history, hyperlipidemia, high blood pressure, high level of cholesterol, diabetes, and obesity are among the causes of this disease. The above factors alone do not play a decisive role in the incidence of the disease, but some personality, behavioral and psychological variables create directly and indirectly a favorable environment for people's affliction with the disease and reduce the quality of life of patients [2]. The most common problems in heart patients are negative emotions, and their management affects the experience of emotions and their manifestation. People have different types of emotions and regulate their emotions in different ways [3]. Negative emotions represent a general dimension of inner unhappiness and unpleasant occupation and include unpleasant states such as fury, hatred, disgust, guilt, fear, and anger. Negative emotions have a positive relationship with mental disorders and are effective in creating and perpetuating mental disorders [4]. At the broadest level, the emotion regulation process model distinguishes between two antecedent-focused and response-focused strategies. Antecedent-focused strategies modulate emotional response tendencies first before complete responses are formed. Response-focused strategies refer to

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strategies that are activated after an accident or after the onset of emotion and cannot prevent the development of intense emotions [5]. Resilience is another important and effective component in cardiovascular diseases. According to Zautra et al. (2010), the best definition of resilience is to consider it a successful adaptation to adverse conditions [6]. Resilience is the ability to return to one's original situation after bending, squeezing, or stretching, but also, in psychological terms, the ability to recover quickly from disease, depression, and illness. In linguistic terms, the term resilience refers to the ability of an object to recover its original shape and structure after being deformed by external forces. Thus, the term resilience may refer to behavioral phenomena in engineering, physiology, environment, and human behavior. In terms of human behavior, resilience is often seen as a wide range of situations and traits related to character, personality, and coping ability. In this section, resilience refers to empowerment, flexibility, the ability to master or return to a normal state after facing stress and severe challenge [7]. A person's characteristics and position can determine resilience processes if they lead to healthy outcomes after stressful situations. Longitudinal studies show that significant trauma and adverse psychological conditions cause significant changes in both short-term and long-term outcomes and predispose a person to chronic diseases such as cardiovascular problems [8, 9]. Perhaps one of the reasons people with dysfunctional problem-solving styles are prone to psychological disorders is their inadequacy in proper regulation of emotions and their high level of negative emotions. Finally, the interrelationship between physical and psychological factors, as well as the continuation of negative emotions with heart problems in heart patients in the long run causes psychological depletion of the affected people and causes them to become psychologically exhausted and their resilience decrease. Low resilience increases their risk of other physical and psychological illnesses. Due to the physical and mental injuries and disorders that heart disease causes to people with the disease, providing treatments and interventions that reduce these disorders can also have a significant impact on the control and treatment of heart disease [10]. Among the treatments and interventions proposed in psychology are acceptance and commitment therapy. It seems that we can use it to reduce psychological disorders caused by heart disease. In acceptance and commitment therapy, it is assumed that human beings find many of their inner feelings, emotions, or thoughts annoying and are constantly trying to change or get rid of these inner experiences. These attempts at control are ineffective and paradoxically exacerbate the feelings, emotions, and thoughts that the individual initially tried to avoid [11]. In addition to acceptance and commitment therapy, schema therapy is another intervention in the treatment of mental illness. Researchers have studied and approved schema therapy in the treatment of personality disorders, but have expanded its scope of application and showed its effectiveness in the field of disorders such as anxiety, post-traumatic stress disorder, obsessive-compulsive disorder, and major depressive disorder [12]. One of the applications of this method is for treating cardiovascular patients. Because psychological factors play a role in both predisposing and exacerbating heart disease. These factors range from defense mechanisms and maladaptive coping techniques, experiencing stress, anxiety, depression, generalized anxiety disorder, interpersonal hostility, obsessive thoughts and behaviors, and morbid fears to personality traits and types of psychological trauma [13]. In evaluating the effectiveness of acceptance and commitment therapy in increasing hope and reducing negative emotions of ninth grade male students, Hani Asl Heizani et al. (2019) showed that acceptance and commitment therapy has a significant effect on hope and negative emotions, increases hope and reduces negative emotions in the ninth grade boy students [14]. Thus, we can use acceptance and commitment therapy to increase hope and reduce the negative emotions of male students. In the study of the effect of acceptance and commitment therapy on irrational beliefs and attentional bias to stimuli with negative emotional load in adolescent girls, Rahmanian et al. (2018) showed that acceptance and commitment therapy is of no effect on irrational beliefs of adolescent girls [15]. In evaluating the effectiveness of schema therapy in reducing aggression and negative emotions in "17-18" year old boys in Hamadan, Hemmati Sabet et al. (2016) showed that schema therapy is effective in reducing aggression and negative emotions in "17-18" year old boys in Hamadan [16]. In evaluating the effectiveness of acceptance and commitment therapy on resilience and marital satisfaction of male veterans' spouses, Jafari et al. (2018) showed that acceptance and commitment treatment could increase the resilience and marital satisfaction of male veterans' spouses [17]. The results also showed a significant difference between the two groups in the dimensions of verbal communication, conflict resolution, financial management, and leisure, and no significant difference was observed in other subscales. According to the results, we can infer that acceptance and commitment therapy can be used to increase the resilience and marital satisfaction of male veterans' spouses. In evaluating the effect of acceptance and commitment group therapy on the resilience of mothers with mentally retarded children, Mesbah et al. (2018) showed that there is a significant difference between the experimental and control groups in resilience [18]. According to the research findings, we can say that acceptance and commitment group therapy is an effective way to increase resilience in mothers with mentally retarded children. Examining the effect of acceptance and commitment therapy training on negative emotions of students with heart disease, Yamagashi (2017) showed that the level of negative emotions in both groups had a high mean in the pretest [19]. But after applying acceptance and commitment therapy training on the experimental group, the number of their negative emotions decreased significantly. In the study of the effect of schema therapy on negative emotions and anxiety in children after schema therapy intervention and post-test, the

results of Israelashvili, Sauter, & Fischer (2019) showed a significant reduction in the level of negative emotions in the experimental group [20]. In evaluating the effect of acceptance and commitment therapy training on resilience among coronary artery patients, Shink et al (2013) showed that acceptance and commitment therapy training significantly increases resilience among coronary artery patients; improving their resilience, has improved the disease and life expectancy [21]. In the study of the effect of schema therapy training on resilience in MS patients, Renik et al (2011) showed that resilience in the experimental group was significantly different from the control group [22]. Therefore, schema therapy training is one of the effective methods for improving MS patients. According to the above, the researcher in the present research seeks to compare the effect of acceptance and commitment therapy and schema therapy on negative emotions and resilience of heart patients.

Research Method

A. Method

This is a quasi-experimental research with pretest-posttest, two experimental groups, and one control group. In this project, which consisted of three groups (training group of acceptance and commitment, schema therapy training group, and control group), we implemented the pre-test form for three groups and then the post-test form after the intervention. The statistical population of this research included 3548 heart patients referred to the Nuclear Medicine Center in 2017 in Tehran. To select the sample, we selected 45 patients at convenience. Then, according to the objectives of the research and having the consent to participate in the research, we assigned them in a simple random manner to three groups of 15 people (two experiments and a control).

B. Tool

Negative Emotions Questionnaire: The Garnefski & Kraaij Cognitive Emotion Regulation Questionnaire (quoted by Bahrami et al, 2012) is an 18-item tool [23]. In this research, we have used 8 items related to negative emotional cognitive regulation. Besharat (2012, 2016) has validated the Persian version of the Cognitive Emotion Regulation Questionnaire in Iran [24, 25]. The study of Besharat (2012) has reported being desirable the psychometric properties of this form, including internal consistency, retest reliability, content validity, convergent, and diagnostic (discriminant) validity [25]. Kalhori (2017) obtained the Cronyach alpha level of the Emotional Cognitive Regulation Questionnaire as 0.72, indicating the reliability of this questionnaire [26]. The score of each option is as follows: never = 1, sometimes = 2, usually = 3, often = 4, always = 5. In the present research, the reliability coefficient calculated by Cronbach's alpha was 0.76.

Resilience Questionnaire: Connor and Davidson (2003; quoted by Mohammadi, 2005) prepared this questionnaire by reviewing the research resources of 1979-1991 in the field of resilience. Psychometric properties of this scale were performed in six groups, general population, primary care patients, psychiatric outpatients, patients with a comprehensive anxiety disorder, and two groups of patients with post-traumatic stress disorder. This scale has been standardized in Iran by Mohammadi (2005). He used Cronbach's alpha method to determine the reliability of the Connor and Davidson resilience scale and reported a reliability coefficient of 0.89. Scoring options is as follows: completely incorrect = 0, rarely = 1, sometimes true = 2, often true = 3, always true = 4. Test scores range from 0 to 100. In the present research, the reliability coefficient of the resilience questionnaire calculated by Cronbach's alpha was 0.83.

C. Procedure

The method of researching this study was that after selecting a sample from among the target population, we randomly divided subjects into three groups (two experimental groups and one control group). Then, a pre-test was performed for all three groups. Then, we taught the independent variables, namely acceptance and commitment therapy in 12 sessions (1 week, 2 hours) and schema therapy in 10 sessions (1 week, 2 hours). The subjects in the control group did not receive any intervention during this period. After the training sessions, a post-test was performed for all three groups (two experimental groups and one control group), so that the post-test results were compared in two experimental groups and one control group.

Research Findings

Table 1: Characteristics of describing negative emotions and resilience in the two periods before and after the experiment

Variable	Group	Before the experiment		After the experiment	
		Mean	Standard deviation	Mean	Standard deviation
Negative emotions	Schema therapy	07.28	56.8	6.19	17.8
	Acceptance and commitment therapy	2.27	83.8	2.10	25.8
	Control	8.25	81.8	5.25	81.8

Resilience	Schema therapy	8.43	39.20	47.58	98.23
	Acceptance and commitment therapy	73.43	34.20	47.84	77.22
	Control	27.40	9.20	39	18.21

As can be seen in table (1), in the pre-test form, the mean scores of the subjects in negative emotions in the groups of schema therapy training, Acceptance and commitment therapy training, and control are 28.07, 27.2, and 25/8, and their standard deviation is 8.56, 8.83 and 8.81, respectively. While after testing the average scores in the schema therapy training groups, Acceptance and commitment therapy training and control are respectively 19.6, 10.2, and 25.5 and their standard deviation is 8.17, 8.25, and 8.81, respectively. In the pre-test form, the average scores of the subjects in resilience in the groups of schema therapy training, Acceptance and commitment therapy training, and control are respectively 43.8, 43.73, and 40.27, and their standard deviation is 20.39, 20.34, and 20.9 respectively. While after testing the mean scores in the groups of schematic therapy training, acceptance and commitment therapy and control are respectively 58.47, 84.47, and 36 and their standard deviation is 23.98, 22.77, and 21.18, respectively. Therefore, participating in the classes of schematic therapy training and acceptance and commitment therapy training has improved negative emotions and resilience in the two experimental groups. However, in the control group, negative emotions and resilience did not change in the post-test, since they did not participate in the classes of schema therapy and acceptance and commitment therapy training.

Table 2: Results of multivariate analysis of covariance to examine the intra-group difference of the mean of negative emotions and resilience of heart patients

Source of changes	Variable	Total squares	Degree of Freedom	Mean squares	F	Significance	Eta
Group	negative emotions	127.14497	2	564.7248	589.20	*001.0	507.0
	resilience	966.1794	2	483.987	390.26	*001.0	569.0
Error	negative emotions	454.14082	40	061.352			
	resilience	351.1360	40	009.34			

* $P \leq 0/05$

The results of multivariate analysis of covariance in table (2) show that with pre-test control, there is a significant difference between the mean scores of experimental and control groups in terms of negative emotions score in post-test (P = 0.001 and $F_{2,40}$= 20.589). Therefore, participation in the classes of schema therapy and Acceptance and commitment therapy affects the resilience of heart patients. The rate of this effect is 50.7%. It has increased resilience in heart patients in the post-test compared to the pre-test. With pre-test control, there is a significant difference between the mean scores of experimental and control groups in terms of resilience score in post-test (P = 0.001 and $F_{2,40}$= 26.390). Therefore, participating in the classes of schema therapy and Acceptance and commitment therapy affects the resilience of heart patients. The rate of this effect is 56.9%. It has increased resilience in heart patients in the post-test compared to the pre-test.

Table 3: Results of LSD test to compare the effect of schema therapy classes and Acceptance and commitment therapy on negative emotions and resilience in heart patients

Post-test of variable	Group (J)	Group (I)	Mean difference (I-J)	Significance	Low limit	Up limit
Negative emotions	Therapy	Acceptance and commitment	4.9	*004.0	2.3	6.15
	Therapy	Control	2.6-	*049.0	4.12-	001.0-
	Acceptance and commitment	Control	6.15-	*001.0	8.21-	4.9-
Resilience	Therapy	Acceptance and commitment	26-	*003.0	7.42-	29.9-
	Therapy	Control	47.19	*023.0	76.2	17.36
	Acceptance and commitment	Control	47.45	*001.0	76.28	17.62

* $P \leq 0/05$

According to the results of table (3), there is a significant difference between the effect of schema therapy and acceptance and commitment therapy on negative emotions and resilience of heart patients (because the amount of significant level was less than the error of 0.05). The effect of acceptance and commitment therapy on negative emotions and resilience of heart patients has been more than schema therapy.

Discussion and Conclusion

This research aimed to compare the effect of acceptance and commitment therapy and schema therapy on negative emotions and resilience of heart patients. Findings indicate that participation in schema therapy classes and acceptance and commitment therapy has an impact on negative emotions and resilience of heart patients. In other words, the interventions have reduced negative emotions and increased resilience in heart patients in the post-test compared to the pre-test. However, from among these two therapeutic interventions, the effect of acceptance and commitment therapy on negative emotions and resilience in heart patients was more than schema therapy training. These results are consistent with the findings of Mahdavi et al (2017), Hani Asl Heizani et al. (2019), Rahmanian et al. (2018), Hemmati Sabet et al. (2016), Jafari et al. (2018), Mesbah et al. (2018), Yamagashi (2017) Bergley (2017) Shink et al. (2013), Renik et al. (2011), Salimi, Mahdavi, Yeghaneh et al (2019) [14, 15, 17-19, 21, 22, 27-30]. In explaining the results, we can say that emotion regulation is an important factor in determining health and having a successful performance in social interactions and plays an important role in our adaptation to stressful life events. The ability of individuals to effectively regulate emotions affects psychological, physical, and interpersonal happiness. In these interventions, subjects learned to not attempt to reduce, change, avoid, suppress, or control these internal experiences, but to reduce the impact of undesirable thoughts and feelings through the effective use of mindfulness. Clients have learned to stop fighting their inner experiences and open their arms to them and allow them to come and go without effort. Time, effort, and money they used to spend on control of their mood take effective action on their life values so that their hours of life come to life and their moments become more precious.

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