Original Article

Comparison of the Effectiveness of Acceptance and Commitment based Therapy and Emotion-focused Therapy on Adherence to Treatment in Cardiac Patients

Maryam Aghel Masjedi[1], Javad Khalatbari [2*], Shahnam Abolghasemi[3], Taher Tizdast[4], Jalal Kheir Khah[5]

1-Ph.D. Student, Department of Psychology, Tonekabon Branch, Islamic Azad University, Tonekabon, Iran .
2-Associate Professor, Department of Psychology, Tonekabon Branch, Islamic Azad University, Tonekabon, Iran.
3-Associate Professor, Department of Psychology, Tonekabon Branch, Islamic Azad University, Tonekabon, Iran.
4-Assistant Professor, Department of Psychology, Tonekabon Branch, Islamic Azad University, Tonekabon, Iran .
5-Associate Professor, Associate Professor of Cardiology, Gilan University of Medical Sciences.
*(*Corresponding Author: Dr. JavadKhalatbri,Email: javadKhalatbaripsy2@gmail.com)*

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Abstract

Introduction: The role of adherence to treatment in many chronic diseases, including heart disease, has been confirmed. The purpose of this study was to compare the effectiveness of Acceptance and Commitment Therapy and Emotion-Focused Therapy on adherence to treatment in Cardiac Patients.
Method: This is a quasi-experimental study with pretest-posttest design with control group. The statistical population of all patients referring to Dr. HeshmatRasht Hospital during February to March 2019 were available by purposeful sampling methodand then the samples were randomly divided into two experimental and one control groups. Data collection tools were demographic questionnaire and standardized adherence to treatment questionnaire. Data were analyzed using descriptive statistics and analysis of covariance by SPSS software, version 25.
Results: outcomes showed that acceptance and commitment therapy and emotion focused therapy were effective on Adherence to treatment (P<0.001). Also, the results of the covariance showed that, there was a significant difference between the groups' adjusted averages for adherence (ETA= 0.804, P= 0.001, F (2,41)=83.904). In other words, there is a significant difference between the two experimental methods onAdherence to treatment in cardiac patients (acceptance and commitment therapy and emotion-focused therapy) with the control group.
Conclusion: According to the results of this study, training of above mentioned therapies can play an important role as adjunctive and rehabilitation therapy along with medical treatments by increasing adherence to treatment.

Declaration of Interest: None

Keywords:Acceptance and Commitment Therapy, Emotion Focused Therapy, Adherence to treatment, cardiac patients.

Introduction

Cardiovascular disease accounts for about half of all deaths from non-communicable diseases (1). It is also the leading cause of premature deaths, which resulted in 17.9 million deaths in 2012, as well as 347.5 million disability worldwide in 2015 (2). Most deaths from heart disease due to ischemic heart disease and stroke occur in one-third of cases in people less than 70 years of age (2).In Iran, the prevalence of the disease is increasing, with 25% to 45% of all deaths resulting from the same disease (3).Coronary artery disease is the most common cardiovascular disease (4).Risk factors for cardiovascular disease include familial history of premature cardiovascular disease(men before 55 and women before 65), hypercholesterolemia, metabolic syndrome, chronic kidney disease, chronic inflammatory disease, premature menopause (before 40 years), high risk pregnancy such as preeclampsia, high risk race / ethnicity (For example the ancestors of South Asia) (5). Lifestyle factors can also cause cardiovascular disease. These include nutrition, diet, exercise, physical activity, overweight and obesity, type 2 diabetes mellitus, hypertension, and tobacco use (5).One of the main concerns and clinical problems of health system staff is problems related to patients not adhering to the prescribed treatment regimen (6). This is especially important in chronic diseases such as long-term follow-up of heart patients (6).Individuals' willingness to follow treatment guidelines is one of the factors that can contribute to improving heart disease (7).Rejection of medication and regimens is often seen in heart patients (7). This inability to follow the treatment, decision-making, and care formation of cardiac patients due to cognitive impairment may lead to death (8).Because of the importance of adherence to treatment in the management of heart disease, consideration of the factors associated with adherence to treatment is needed in cardiac patients, so that interventions to increase adherence to treatment are more effective (7).Failure to follow self-care recommendations contributes to increased hospitalization, morbidity, and mortality of cardiovascular patients(9).As the population ages, as well as increasing clinical trials on the one hand, and increasing use of cardiovascular drugs and taking multiple drugs, on the other hand, may be the reason for non-compliance with drug guidelines(10). Cognitive dysfunction that occurs in cardiac patients impair the ability of patients to adhere to complex drug regimens and limitations of sodium intake and self-care decisions (11).

Recently, cognitive-behavioral approaches have focused on physical illness, and one of the third wave approaches is Acceptance and Commitment Therapy (ACT), which has provided extensive research on physical and mental health issues (12).In Acceptance and Commitment Therapy, clients are trained to first accept their emotions and to be more flexible here and now (12).It is noteworthy that, despite the existing drawbacks and poor performance of other therapies, a third wave of psychological approaches has emerged, in which Acceptance and Commitment Therapy have the potential to modify intrinsic and extrinsic verbal behaviors(13).Acceptance and Commitment Therapy consists of six central processes:acceptance, defusiong, self-context, communication with the

present, values and committed action(12). The major advantage of this method relative to other psychotherapies is to consider the motivational aspects along with the cognitive aspects to further influence and extend this therapy (12).Acceptance and Commitment Therapy is based on functional relativistic theory (14). According to this theory, no thought, feeling, or memory is inherently problematic, dysfunctional or incompatible, and is context-dependent (14). Clients choose those behavioral goals that are of most importance or value to them (14). Emotion-Focused Therapy (EFT) is an empirical approach that considers emotion as the basis of experience in adaptive and non-adaptive functions (15).Also, this type of treatment is fundamentally a psychological construct and a key determinant of self-organization (16). EFT offers three strategies for change: 1. Accessing and modifying the meaning of disparate emotions in relation to experiences of fear, anxiety, and shame; 2. these emotions integrate with current semantic systems and 3. Provide a healing experience with the therapist (15).EFT focuses on rehabilitating emotional processing in therapy to help people transform emotional pain and solve behavioral and behavioral problems (17). Emotion-Focused Therapy is effective both individually and as a group Depression Disorder, Quality of Life, Post Traumatic Stress Disorder (PTSD) and Adaptive Functions, and includes methods to activate specific emotions that are established in an empathic context (18).Research Findings The Impact of Acceptance and Commitment Therapy on the Improvement of Psychological Distress and Adherence to treatment(6), Pain-related anxiety in patients with chronic pain(19), on Intolerance, Uncertainty, and Experience Avoidance And symptoms of Generalized Anxiety Disorder(GAD)(20) hypertension and cognitive emotion regulation (13)have been found to be effective. The results also indicate the effectiveness of emotion-focused therapy on cognitive emotion regulation (21), anxiety disorders (22), emotional maladjustment, suicidal ideation and hopelessness (23), quality of life and Marital satisfaction (24), severity of depression (25), cognitive emotion regulation and Alexithymia (26).Patients with heart disease mostly have distressing thoughts and inhibition of thoughts and emotions is seen in these patients. The frustration of not controlling these distracting thoughts and emotions creates new unwanted effects and increasingly alienates oneself from things that are valuable to them, such as health, work, friends and family, and produces negative emotions (7). Research suggests that in addition to physical therapy, psychological interventions for cardiac patients should be considered (27).Given the number of cases, and with the increasing number of people with cardiovascular disease, this chronic illness can cause problems in patients' lives Therefore, the use of therapeutic methods to assist these individuals is essential. Also, no review of the literature has examined such research in people with cardiovascular disease. This study was to compare the effectiveness of Acceptance and Commitment Therapy and Emotion-Focused Therapy on adherence to treatment in Cardiac Patients.

Methods

This study was a quasi-experimental and pretest-posttest design with a control group. The study population consisted of

all patients referring to Dr. Heshmat Rasht Cardiovascular Hospital from February to March 2019. Participants were 45 people who were selected by available sampling method and then the samples were randomly divided into three groups (two experimental and one control group).The experimental groups received 8 sessions of 90 minutes one session per week for two months and the control group received no training. After completing the course, post-test was performed on all three groups. Data on adherence to treatment guidelines were collected using the adherence to treatment Inventory. Inclusion criteria included having a cardiovascular disease diagnosis based on clinical findings and diagnosis of a specialist physician, informed consent and willingness to participate in the research, ability to attend meetings, and collaboration in homework assignments, physical and psychological stability,and minimum education level. And the age range was between 20 and 50 years. Exclusion criteria include psychological or other physical illness and the presence of Acute and severe symptoms that make it difficult or impossible for the patient to participate in the present study.

Tools

1-Demographic Checklist: This questionnaire was developed by the researcher to collect personal information such as age, education, marital status and occupation of the subjects**.**

2-Adherence to treatment Inventory: Questionnaires of general compliance and specific compliance were designed to measure the rate of chronic patients' compliance (26). It measures the physician as a whole and has 5 items with reported internal consistency (alpha of 81%). Questionnaire on adherence to treatment in Iran was designed and psychometrically developed by Medanloo in 2013 for chronic patients. The questionnaire included 40 questions in the areas of effort to treatment (9 questions), willingness to participate in therapy (7 questions), ability to adapt (7 questions), Integrating treatment and life (5 questions), compliance to treatment (4 questions), commitment to treatment (5 questions) and planning for treatment (3 questions) (27). The questionnaire's grading and interpretation method is based on a five-point Likert scale. In terms of validity and reliability, the face and content validity of the tool were confirmed by Medanloo's research and the reliability of treatment adherence instrument was assessed by test-retest method with a correlation coefficient of 0.85(28). Data were analyzed using descriptive statistics and analysis of covariance by SPSS software, version 25. The general structure of acceptance and commitment therapy and emotion-focused therapy are presented in the following tables.

Table 1. Content structure of Acceptance and Commitment Therapy

Content	Session
Familiarity with group members and therapeutic relationships, Explanation of heart disease , description of group rules, discussing confidentiality, goals, treatment, familiarity with the therapeutic approach, and practicing mindfulness and creative hopelessness research. Assignment: Note at least 5 of the problems patients face in life	**First**
Performance appraisal, creative hopelessness, discussing experiences and evaluating them, eliciting avoidance and confusion experiences and individual values.	**Second**

Mind Consciousness and Acceptance, Role-Playing Monsters on the Bus, Mindfulness Exercise, and Homework: Performing Mindfulness Exercises	**Third**
Performance Measurement, Introducing Fault, Applying Cognitive Faulting Techniques (Fault Exercises Help People to Interact with Thoughts in Different Ways) Allegations of Bus Passengers, Mental Imagery Placing Clouds, and Observing Unfair Thought Judgment: Case Recordings That the patient has been able to observe and evaluate their thoughts without judgment	**Fourth**
Reviewing the response to the previous session, communicating with the present, and considering it as the context, the metaphor of the chessboard is considered a major treatment intervention, and is a way of linking references to the distinction between content and self as an observer. Practical Exercise Using Worksheets Assignment: Mental Imaging Practice	**Fifth**
Performance Measurement, Introducing Value Concepts, Demonstrating Focus on Outcomes, Discovering Practical Life Values (In this part of the treatment, people were instructed to evaluate values using the Valuation Questionnaire) Priority basis	**Sixth**
Reviewing the past session and reviewing the performance, continuing to evaluate the values, providing practical solutions to the metaphors and practicing the barriers, understanding the nature of the assignment: recording what constitutes an obstacle to the realization of the values	**Seventh**
Reviewing previous sessions and reviewing the achievements of therapeutic sessions and reviewing values, identifying patterns that are commensurate with the values and commitments and committing the group members to a new goal. Providing mindfulness practice with a focus on increasing kindness to oneself and to others	**Eighth**

Table 2. Content structure ofEmotion-focused therapy

Content	**Session**
Communication and Commitment in Treatment, Explaining Heart Disease, Causing and Maintaining Factors, Risk Factors, Describing Group Rules, Discussing Confidentiality, Goals, Type of Emotion Focused Therapy Conceptualization, Assessment of Subjects Based on Ability to Focus On internal experiences	**First**
Identifying a faulty interactive cycle, identifying conflicting, dualistic, and critical feelings about yourself and important influential people in life	**Second**
Identify basic emotions and express emotion, teach the naming of emotions in the present, discuss the four main emotions and their needs	**Third**
Creating usually unpleasant emotional experiences in communication and family contexts and challenging them, placing the subjects in a two-chair dialogue position to identify the initial hidden emotion and debate between the empiricist and the self-critic	**Fourth**
The use of relaxation techniques, speech, and self-criticism can be calmed down and the subject's experience of helplessness reduced. Put subjects in an empty chair to talk to influential people in their lives	**Fifth**
Strengthening positive emotions through the process of forgiveness and self-criticism and its positive effects on patients' cardiac function and increasing awareness of the consequences of delaying the process of forgiveness.	**Sixth**
Expressing your own values and how to live with them and pointing to emotional and emotional needs and ways to meet those needs in line with values (for example maintaining health as a value)	**Seventh**
Review the skills offered and reinforce the changes made during treatment. Highlighting the differences between current and old interactions and summarizing points raised in previous sessions	**Eighth**

Results

Covariance analysis with pre-test effect was used for data analysis. Before using the parametric test of covariance analysis,

its assumptions were tested. The assumption of normal distribution of the data were evaluated by Shapiro–Wilks test ($p<0.05$). Theassumption of the homogeneity of the coefficients was also established. Also, the results of the Leven test indicated the equalization of variances ($p>0.05$). In terms of age index, the majority of the sample were 20-41 years old (44.43%) and the least were 20-30 years old and 11 (24.4%) patients. Bachelor's degree was the highest in education. Analysis of covariance analysis to compare the effect of different treatments showed that there was a significant difference between Adherence to treatment in pre-test and post-test according to treatment method.The results of Bonferroni post hoc test showed thatthere is a significant difference between the effectiveness of Acceptance and Commitment Therapy(ACT) and Emotion-Focused Therapy(EFT) on the therapeutic efficacy of individuals.There is a difference between the mean of the control group and the mean of the experimental groups in the dependent variable of adherence to treatment, which is in the interest of the experimental groups.

Also, based on the mean differences, it can be concluded that Emotion-Focused Therapy is more effective than Acceptance and Commitment Therapy.

Table 3:Means and adjusted mean and standard deviations of Adherence to treatment

	Pre test		**Post test**		**Estimates Mean**	
Source	Mean	SD	Mean	SD	Mean	SD
EFT	78.33	6.543	122.87	14.560	123.353	2.385
ACT	79.73	4.061	105.60	8.927	104.861	2.391
Control	78.60	4.050	79.67	3.867	79.919	2.381

Based on the results of Table 3, the adjusted mean of the components of the dependent variable, where the effect of random auxiliary variables is statistically eliminated.These averages indicate that the mean of the experimental groups is higher than the control group.

In order to evaluate the difference between the scores in the pre-test and post-test phases, the covariance analysis test was used. The results are presented in **Table 4.**

Table 4:Results of the covariance analysis test for variables of

Variable	**Assessment**	**Source of change**	**df**	**Mean of Square**	**F**	**Significance level**	**Effet Size**
		Pre-test	1	810.906	9.549	0.004	0.189
Adherence	Post test	Group	2	7125.210	83.904	0.001	0.804
		Error	41	84.921			

Table 4 also presents ANCOVA univariate analysis of covariance. Eta values indicate that approximately 80% of the variance of the therapeutic adherence variable is accounted for by the group variable.

As can be seen from the results of the covariance in Table 4, there was a significant difference between the groups' adjusted averages for adherence (ETA = 0.804, P= 0.001, F(2,41)=83.904). In other words, there is a significant difference between the two experimental methods on adherence to treatmentin cardiac patients (Acceptance and Commitment Therapy and Emotion-Focused Therapy) with the control group.Since F is statistically significant, a follow-up test should be usedfor this purpose, the paired comparison test was used and Bonferroni method was used for significance level. The results are shown in Table 5.

Table 5: Comparison of two-way post-test means of Adherence to treatment among the three group

Dependent Variable	Group(I)	Group(J)	(I-J)	Std. Error	Sig
Adherence	EFT	ACT	18.491	3.388	0.001
		Control	43.433	3.366	0.001
	ACT	Control	24.942	3.380	0.001

There was a significant difference between the mean of adherence to treatmentwith (ACT)and (EFT) groups and the mean of adherence to treatment with control group at p<0.001. This difference is due to the(ACT) and (EFT)groups, which has led to a greater increase adherence to treatmentin patients with heartdisease.There was also a significant difference between the mean adherence to(ACT) and the average adherence to (EFT).And this difference is the benefit of the (EFT) group.

Conclusion

The purpose of this study was to compare the effectiveness of Acceptance and Commitment Therapy and Emotion-Focused Therapy on adherence to treatment in Cardiac Patients. The results showed that acceptance and commitment Therapy and Emotion-Focused Therapy were effective in improving adherence to treatment in cardiac patients compared to the control group. Several studies have investigated the efficacy of ACT and EFT treatments on psychological problems, including Acceptance and Commitment Therapy on pain-related anxiety in patients with chronic pain (19) and on intolerance, uncertainty and experiential avoidance, and Symptoms of generalized anxiety disorder in type 2 diabetes patients (20) as well as in hypertension and cognitive emotion regulation in patients with hypertension (13).In a study by Biotel et al(22), the results indicate the effectiveness of Emotion-Focused Therapy on anxiety disorders. Also, Emotion-Focused Therapy on cognitive emotion regulation in emotionally abused students

(21), emotional maladaptation of suicidal thoughts and hopelessness in veterans with post-traumatic stress disorder (23), quality of life and satisfaction Marital status of mothers of children with cancer (24), severity of depression in patients with major depression (25) and affecting improvement of quality of lifeinstudentswithdepression(31). Despite the confirmation of the effectiveness of Emotion-Focused Therapy, this approach has not been investigated in internal and external research in chronic patients, especially cardiac patients.The use of Acceptance and Commitment Therapy for cardiac patients was evaluated and preliminary evidence indicated an increase in cardiac health behaviors in these patients, and the results in particular showed significant changes in diet improvement and moderate increase in physical activity compared to pre-treatment(32).ACT reduces anxiety and physiological stress in the person by increasing one's awareness of present experiences and shifting attention to cognitive systems and more efficient processing of information (33).In the treatment of Acceptance and Commitment, the term treatment is not used the cure, Rather, it is the use of the word remedy and solution(34).One of the major goals of the ACT is to liberate people from their minds and to urge the individual to spend more time dealing with the positive consequences of their present time(34).Acceptance and commitment therapy focuses on verbal barriers to effective practice. Clients often have skills deficiencies and require the training of skills to deal effectively with the value-added commitment (34).

In Acceptance and Commitment Therapy, individuals' desire for internal experiences was emphasized and trying to help patients experience their own maladaptive thoughts as a single thought and become aware of the ineffective nature of their current plan. Instead of responding, do what is important to them in life and in line with their values.For example, in people with chronic illnesses such as heart disease, paying attention to a physician's advice and following a diet and drug regimen plays an important role in the clinical course of the disease, and patients should consider health as one of the values of life. And it was trying to get patients to embrace different issues and not worry about future events and to experience stressful inner events by replacing "self as context" instead of "self-conceptualized". They were able to dissociate themselves from unpleasant reactions, memories, and thoughts, which were intended to increase individuals' psychological flexibility.

This approach led to a reduction in pain-related anxiety (19) and hypotension (13), as shown by statistical results, and an improvement in psychological distress and adherence to treatment in coronary heart disease patients(21).In recent decades, extensive research has been conducted on the etiology of heart disease and the role of psychological factors such as personality traits, behavioral patterns, physical reactivity, self-involvement, anxiety and stress, depression, Anger poured out and collapsed in heart disease has been confirmed. (35).There seems to be a bilateral relationship between physical illness and psychological trauma (36).Among the factors affecting adherence to treatment are mental health (37) of patients and as patients with

chronic diseases such as heart disease may have negative emotions such as stress and depression (38) negative affect, anger And experience hostility and social restraint (39).It is not surprising that disturbance in emotion regulation and regulation can lead to psychological trauma (40).Research has shown that controlling psychological risk factors after medical interventions on coronary heart disease patients is necessary and effective in pursuing treatment regimen because psychological disorders through negative emotional and psychosocial burden will have negative effects on patients (40).Another result of the present study was that the emotion-focused approach was more effective in enhancing therapeutic compliance compared to acceptance and commitment therapy and the control group. The present finding is in line with research by Beutel et al. (22) that results indicate the effectiveness of emotion-focused therapy on anxiety disorders and emotion-focused therapy on the severity of depression in patients with major depression (25), quality improvement The life of students with depression (31) and effect on cognitive emotion regulation and emotional distress in patients with coronary heart failure (26).

In explaining the effectiveness of EFT more than ACT it should be noted that ACT emphasizes the acceptance of thoughts and emotions(12)and urges people to accept these thoughts and emotions and not try to avoid themand move in line with the values set (7).But EFT emphasizes identifying and changing unpleasant emotionsin patients and it is about processing and changing undesirable emotions and replacing them with desirable and compatible emotions (41).As mentioned, heart patients experience a lot of negative emotions and emotional deterrence (7), which can be a barrier to compliance. These inhibited emotions are processed in a context of trust and empathy (41) that underlies Emotion-Focused Therapyand the individual achieves a new meaning in life that creates a new meaning that will guide and plan for the future in line with the recommended treatment regimenand brings more therapeutic compliance.The human experience is full of real and potential problems that do not allow for the fulfillment of basic needs and desires, and thus cause psychological (emotional) pain;Investigating what needs are not met is a critical part of the work on Emotion-Focused Therapy (42).Emotional pain also has physiological aspects that are distressing and cause tangible physical pain and affect breathing, muscle cramps, sleep, fatigue, appetite, and physical pain (42).Emotional pain also manifests itself as changes in the cardiovascular systems, nerves and glands and the immune system,it also identifies needs associated with emotional pain and appropriate emotional response tothe underlying needs make suffering, though still painful and sad, more tolerable for the individual and can be transformed into a more emotionally mature way of life (42).By doing this phase of treatment, people become aware of their emotions and, in a safe space, express new emotions in a variety of situations, expressing new behaviors and increasing their satisfaction (43).

Unfortunately, no research has been found, both inside and outside the country, to align or disagree with the findings of this study, and further research is needed to

determine the impact of this method on various aspects of psychological problems. From the results of various studies it can be deduced that there are good reasons to do more research in acceptance and commitment therapy and Emotion Focused Therapy. The present study has some limitations such as non-implementation of follow-up in order to evaluate the effectiveness of long-term educational methods. Also in the present study, the subjects were only women with heart disease, and it is unclear whether the intervention methods used by other groups, including men and different age groups, are effective. Therefore, the generalizability of the results should be exercised with caution. But according to the findings of the researchers' follow-up studies and learning and Application of Acceptance and Commitment Therapy Training, and emotion-focused therapy education can be used to increase Adherence to treatment in patients with heart disease. Also, the effectiveness of the approaches used in the present study can be investigated in clinical samples with different psychologicalproblems.

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