Original Article

Comparison of the Effectiveness of Acceptance and Commitment Therapy and Emotion-Focused Therapy on Anxiety Sensitivity in Cardiac Patients

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Abstract

Introduction: The role of anxiety sensitivity in the clinical course of many chronic diseases, including cardiovascular disease, has been confirmed, which can cause and lead to various cardiovascular diseases. The purpose of this study was to compare the effectiveness of acceptance and commitment therapy and emotion-focused therapy on anxiety sensitivity in cardiac patients.

Method: This was a quasi-experimental study with pretest-posttest design with control group. The statistical population included all patients referred to Dr. Heshmat Rasht hospital during February and March 2019. Convenient sampling method was used to select the samples and then the subjects were randomly divided into two experimental and one control group. Data were analyzed using descriptive statistics and analysis of covariance.

Results: Outcomes showed that acceptance and commitment therapy and emotion focused therapy were effective on Anxiety sensitivity ($p<0.05$). Also, the results of the covariance showed that, there was a significant difference between the groups' adjusted averages for Anxiety sensitivity ($F (2, 41) = 208.387$, $P<0.05$). In other words, there is a significant difference between the two experimental methods on anxiety sensitivity in cardiac patients (acceptance and commitment therapy and emotion-focused therapy) with the control group.

Conclusions: Anxiety sensitivity plays a predisposing, accelerating, and sustaining role in cardiovascular disease, and training in the above treatments can play an important role as adjunctive and rehabilitation therapy alongside medical treatments.

Declaration of Interest: None

Keywords: Acceptance and commitment therapy, Emotion focused therapy, Anxiety sensitivity, cardiovascular disease

Introduction

Cardiovascular disease is the leading cause of premature deaths, which has resulted in 17.9 million deaths in 2012, as well as 347.5.5 million disability in 2015 worldwide(1). Most deaths from heart disease are due to ischemic heart disease and stroke occur in one-third of cases in people less than 70 years of age (1). However, coronary artery disease is the most common cardiovascular disease (2). Cardiovascular disease is predicted to cause more than 23 million deaths (about 30.5%) by 2030 worldwide (1). Cardiovascular disease is putting a lot of economic pressure on the United States and around the world (3). It has also become one of the most important health problems in developing countries and developed countries (2). Risk factors for cardiovascular disease include family history, premature cardiovascular disease (men before 55 and women before 65), hypercholesterolemia, metabolic syndrome, chronic kidney disease, chronic inflammatory disease, premature menopausal history (before 40) is a high risk pregnancy such as preeclampsia, high risk race (for example the ancestors of South Asia). Lifestyle factors can also cause cardiovascular disease, including nutrition and diet, exercise and physical activity, overweight and obesity, type 2 diabetes mellitus, hypertension and tobacco use (4). Anxiety disorders, which are the most common type of psychiatric diagnosis, are among the disorders associated with heart disease (5). The vulnerability factor for anxiety and anxiety disorders that is the subject of much scientific attention today is anxiety sensitivity (6). Anxiety sensitivity is a construct of personality differences in which one is afraid of physical symptoms associated with anxiety arousal (such as increased heart rate, shortness of breath, Vertigo), and it is generally believed that these symptoms have consequences, potentially leading to social, cognitive, and physical trauma (7). Anxiety sensitivity in a cardiovascular patient can have a significant impact on the progression of the disease as well as the management of the disease, and anxiety is the most important psychological factor affecting cardiovascular patients (8). Therefore, the use of psychological therapies can reduce the effects of psychological injuries on the incidence and exacerbation of heart disease.

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 (9). In Acceptance and Commitment Therapy, clients are trained to first accept their emotions and to be more flexible here and now (9). 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 (10). Acceptance and Commitment Therapy consists of six central processes: acceptance, defusing, self-context, communication with the present, values and committed action (9). 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 (9).

Acceptance and Commitment Therapy is based on functional relativistic theory (11). According to this theory, no thought, feeling, or memory is inherently problematic, dysfunctional or incompatible, and is context-dependent (11). Clients choose those behavioral goals that are of most importance or value to them (11). Emotion-Focused Therapy (EFT) is an empirical approach that considers emotion as the basis of experience in adaptive and non-adaptive functions (12).Emotion-focused therapy (EFT) is an increasingly popular form of humanistic therapy that is spreading internationally through standard training curricula (13) Also, this type of treatment is fundamentally a psychological construct and a key determinant of self-organization (14). 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 (12). EFT focuses on rehabilitating emotional processing in therapy to help people transform emotional pain and solve behavioral and behavioral problems (15).

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 (16).Preliminary findings suggest tentative support for EFT effectiveness in group therapy (17)

Research Findings The Impact of Acceptance and Commitment Therapy on the Improvement of Psychological Distress and Adherence to treatment (18), 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 (10), have been found to be effective, anxiety disorders (21), emotional maladjustment, suicidal ideation and hopelessness (22), cognitive emotion regulation and Alexithymia (23). Patients with heart disease mostly have distressing thoughts and inhibition of thoughts and emotions is seen in these patients. Research suggests that in addition to physical therapy, psychological interventions for cardiac patients should be considered (24). 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 Anxiety Sensitivity in cardiac patients.

Methodology:

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 Anxiety Sensitivity guidelines were collected using the Anxiety Sensitivity 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. 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

session	Content
First	Familiarity with group members and therapeutic relationships, 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 problem patients face in life
Second	Performance appraisal, creative hopelessness, discussing experiences and evaluating them, eliciting avoidance and confusion experiences and individual values
Third	Mind Consciousness and Acceptance, Role-Playing Monsters on the Bus, Mindfulness Exercise, and Homework: Performing Mindfulness Exercises
Fourth	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
Fifth	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
Sixth	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
Seventh	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.
Eighth	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

Table 2. Content structure of Emotion-focused therapy

session	Content
First	Communication and Commitment in Therapy, Conceptualizing Emotion-Focused Therapy, Evaluating Subjects Based on Ability to Focus on Internal Experiences
Second	Identifying a faulty interactive cycle, identifying conflicting, dualistic, and critical feelings about yourself and important influential people in life
Third	Identify basic emotions and express emotion, teach the naming of emotions in the present, discuss the four main emotions and their needs
Fourth	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
Fifth	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
Sixth	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.
Seventh	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).
Eighth	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

In this study, two questionnaires have been used: Demographic Checklist and Anxiety Sensitivity Questionnaire.

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-Anxiety Sensitivity Questionnaire:

The original questionnaire was developed in 1985 by Rice and Patterson with 16 items and 3 subscales. The questionnaire contains a relatively small number of items and measures most of the fear factors of physical symptoms. Taylor& Cox (25) developed the revised form of the Anxiety Sensitivity Index, replacing many unrelated, ambiguous and incomprehensible questions with more appropriate questions, measuring the dimensions of the questionnaire from 3 to 4 and the number of questionnaire items from 16 to 36 Increased (25). This questionnaire is based on the five-point Likert scale: This questionnaire has no inverse relation. The rating range of this questionnaire will be between 0 and 144. The higher the score of this questionnaire, the higher the level of anxiety of the individual, and vice versa. Also, the internal consistency coefficient of the questionnaire based on Cronbach's alpha for factors 1 to 4 was, respectively 0.91, 0.86, 0.88 and the correlation coefficient between revised Anxiety Sensitivity Index and Primary Anxiety Sensitivity Index was 0.94. They reported that this questionnaire was validated by Moradimanesh (26) in Iran. Factor analysis using varimax rotation and based on the Scree questionnaire indicates 4 factors of fear of cardiovascular and gastro-intestinal symptoms, fear of respiratory symptoms,

fear of visible anxiety reactions in the general population and fear of uncontrollability Cognitive index was more than 58% of the total variance of the questionnaire. The validity of the revised Anxiety Sensitivity Index was calculated based on the three internal consistency Retrial and descriptive homology methods for the whole scale with a reliability coefficient of 0.93, 0.95, and 0.97 was obtained. The coefficients of subscale reliability and index validity were also high.in the present study, Cronbach's alpha for the anxiety sensitivity questionnaire was estimated 0.72.

Statistical analysis:

Data were analyzed using descriptive statistics and analysis of covariance in SPSS software, ver.25. 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 ($p<0.05$). The assumption of the homogeneity of the coefficients was also established. Also, the results of the Leven test indicated the equalization of variances ($p>0.05$).

Results

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 Anxiety Sensitivity in pre-test and post-test according to treatment method. The results of Bonferroni post hoc test showed that there 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 Anxiety Sensitivity, 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- Adjusted mean and standard deviation dependent variable of anxiety sensitivity

Source	**Pre-test anxiety sensitivity**		**Post-test anxiety sensitivity**		**adjusted mean**	
	Mean	SD	Mean	SD	Mean	SD
EFT	59.33	3.71	33.06	2.789	33.12	0.872
ACT	58.73	3.55	44.93	4.199	45.25	0.876
Control	60.33	5.81	58.80	4.443	58.41	0.878

It can be seen from the table 3 there is a difference between the mean of the control group and the mean of the experimental groups in the dependent variable of anxiety sensitivity, which is also in the interest of the experimental groups. We find that the effect of random covariates is statistically excluded. These averages

indicate that the mean of the experimental groups is lower than the control group.

Table 4 - Summary of analysis of variance of anxiety sensitivity in experimental and control groups by eliminating interaction

Source	**SS**	**df**	**MS**	**F**	**P**	**ETA**
Intercept	88.840	1	88.840	7.785	0.008	0.160
Pre-test anxiety sensitivity	164.393	1	164.393	14.406	0.001	0.260
Between-groups	4756.036	2	2378.018	208.387	0.001	0.910
Within groups	467.874	41	11.412			
Total	5608.800	44				

The results of the covariance implementation are shown in Table 4. As you can see, the correlation effect (p = 0.008, F = 7.786 (p = 0.008)) was statistically significant and therefore correlated with the criteria. The results in Table 4 show that there was a significant difference between the experimental groups that were affected by the emotion-focused therapy and the acceptance and commitment therapy and the control group that did not receive any training (ETA= 0.910, P = 0.000, F (2,41)= 208.387), and this difference is in favor of experimental groups with respect to adjusted mean and Table 3 data.

Table 5- Comparison of two-way post-test anxiety sensitivity in three groups

Groups	difference in mean	F	P
EFT- Control	-25.362	439.115	0.001
ACT- Control	-12.977	102.828	0.001
EFT- ACT	-12.086	95.856	0.001

The figures in the table 5 show that there was a significant difference between the mean of anxiety sensitivity with (ACT) and (EFT) groups and the mean of anxiety sensitivity with control group at p=0.000. This difference is due to the (ACT) and (EFT) groups, which has led to a greater decrease anxiety sensitivity patient with heart disease. There was also a significant difference between the mean anxiety sensitivity in (ACT) and the mean anxiety sensitivity in (EFT). And this difference is the benefit of the (EFT) group.

Discussion

The purpose of this study was to compare the effectiveness of acceptance and commitment therapy (ACT) and emotion-focused therapy (EFT) on anxiety sensitivity in Cardiac Patients. The results showed that acceptance and commitment therapy and Emotion-Focused Therapy

were effective in improving anxiety sensitivity 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 increasing Psychological Flexibility and Marital Intimacy of Infertile Women (27), and pain-related anxiety in patients with chronic pain (21) and onQuality of Life and Perceived Stress in Cancer Patients (28), and in Reduction of Craving and Lapse in Methamphetamine Addict Patients (29),on the Life Expectancy, Resilience and Death Anxiety in Women with Cancer(30) on Negative Emotions of Coronary Heart Disease (31)on Interleukin 12 in patients with Multiple Sclerosis(32) on Emotional Self-efficacy of Family HeadedWomen (33) on intolerance, uncertainty and experiential avoidance, Symptoms of generalized anxiety disorder in type 2 diabetes patients (20) as well as in hypertension and cognitive emotion regulation in patients with hypertension (10) on Depression, Anxiety, Hope, Health-Related Quality of Life, and Psychological Well-Being in Stroke Patients(34). In a study by Biotel et al (21), the results indicate the effectiveness of Emotion-Focused Therapy on anxiety disorders. Also, Emotion Focused Therapy was effective on patients with chronic pain with anxiety and depression (35), emotional maladaptation of suicidal thoughts and hopelessness in veterans with post-traumatic stress disorder (22), on Emotion Regulation Styles and Severity of Obsessive-Compulsive Symptoms in Women with Obsessive-Compulsive Disorder (36). 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. 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 (37). 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 (37). Acceptance and commitment therapy focuses on verbal barriers to effective practice and Clients often have skills deficiencies and require the training of skills to deal effectively with the value-added commitment (37). 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. 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. Also, in explaining the effectiveness of emotion-focused therapy in the research, it can be said that the emotion-focused approach has the potential to increase emotional awareness, emotional notation, awareness of the operation in the experience, and change processes and new emotional experience so that one has more control

over one's own emotions. Because cardiac patients experience a lot of negative emotions, Negative emotions such as fear may be experienced due to the uncertainty of the consequences of the illness and anxiety due to sensitivity to the symptoms of the disease that exacerbate the symptoms of anxiety sensitivity. An emotion-focused approach to treating patients with high anxiety sensitivity first creates a secure relationship that leads to a stronger self-understanding and internalization of positive self-care behaviors, then reinforcing self-referring clients by increasing their confidence in their capacity for trust it done to their inner resources. In explaining the effectiveness of EFT more than ACT it should be noted that ACT emphasizes the acceptance of thoughts and emotions (9) and urges people to accept these thoughts and emotions and not try to avoid them and move in line with the values set (38). But EFT emphasizes identifying and changing unpleasant emotions in patients and it is about processing and changing undesirable emotions and replacing them with desirable and compatible emotions (39). As mentioned, heart patients experience a lot of negative emotions and emotional deterrence (38). These inhibited emotions are processed in a context of trust and empathy (39) that underlies Emotion-Focused Therapy and the individual achieves a new meaning in life that creates a new meaning that will guide and plan for the future. 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 (40). 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 (40). 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 to the 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 (39). 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 (41).

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 concluded that there are beneficial 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 decrease anxiety sensitivity in patients with heart disease. Also, the effectiveness of the approaches used in the present study can be investigated in clinical samples with different psychological problems.

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