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The Effectiveness of Acceptance and Commitment Therapy on Psychological Well-being, Resilience, and Hope for Life in Coronary Heart Disease Patients with High Blood Pressure Visiting Shahid Rajaei Hospital

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A B S T R A C T

The purpose of this study was to examine the effectiveness of Acceptance and Commitment Therapy (ACT) on psychological well-being, resilience, and hope for life among patients with coronary heart disease and high blood pressure who attended Shahid Rajaei Hospital. This was a quasi-experimental study with a pre-test, post-test, and a 3-month follow-up, including a control group. The study population included all individuals with a diagnosis of coronary heart disease and high blood pressure. The sample consisted of 30 patients selected through purposive sampling and randomly assigned to either the experimental or the control group. Data were collected using Ryff's Psychological Well-being Scale (1989), Bond et al.'s Resilience Scale (2011), and Snyder et al.'s Life Hope Scale (1991). The ACT intervention was conducted over eight 90-minute sessions held weekly; however, the control group received no intervention. Data analysis was performed using a repeated measures analysis of variance (ANOVA) with SPSS-26. Findings indicated that Acceptance and Commitment Therapy significantly enhances psychological well-being, resilience, and hope for life in patients with coronary heart disease and high blood pressure ($p < 0.05$). In conclusion, ACT can improve psychological well-being, resilience, and life expectancy in patients with coronary heart disease and high blood pressure. Therefore, this approach can be used alongside medical interventions in healthcare centers.

Keywords: *Hope for life, Resilience, Psychological well-being, Coronary heart disease patients, Acceptance and Commitment Therapy.*

1. Introduction

In recent years, chronic diseases have been the most common causes of death worldwide, and these conditions impair an individual's ability to maintain normal functioning (1). Cardiovascular diseases are one of the largest health problems and the leading cause of death and disability, with a prevalence of 3,500 cases per 100,000 people in Iran (2). Cardiovascular diseases cause increased blood pressure (3) and are the most significant factor in death and the most common reason for hospitalization globally, as cardiovascular diseases account for one-third of global deaths (4). Coronary heart disease, as a major consequence of cardiovascular diseases, impacts the physical, psychological, social, and economic dimensions of those affected (5).

Psychological well-being has increasingly garnered attention in medical research studies (6). In patients with heart failure, possessing adequate psychological well-being enhances health conditions related to heart disease (7). Psychological well-being is defined as the absence of negative emotions, satisfaction with life, and encompasses phenomena that include individuals' emotional responses, realms of satisfaction, and overall life assessments (8). Ryff considers psychological well-being a multidimensional construct consisting of six areas of positive functioning. According to Ryff, psychological functioning should be evaluated based on self-acceptance, personal growth, purpose in life, positive relations with others, environmental mastery, and autonomy (9). Research findings suggest that individuals with high psychological well-being possess numerous positive characteristics, including greater engagement in meaningful activities, self-efficacy, an optimistic explanatory style, reporting positive daily emotions, deep interpersonal relationships, life satisfaction, openness to experiences, positive emotions, independence, and extroversion (10). Additionally, substantial research evidence shows that adverse life events, including cardiovascular diseases, can impact psychological well-being (11). Patients with heart conditions are under high psychological stress and pressure, placing their psychological well-being at risk (12).

Another related psychological variable that acts as a protective factor against psychological pressures and stress is resilience (13). Resilience refers to the extent to which individuals are receptive to internal and external experiences (14). This trait varies among individuals and determines how people react to new experiences (15). Resilience implies that flexibility involves the ability to connect with the present moment and the capacity to differentiate oneself from internal psychological thoughts and experiences (16). Resilient individuals are curious about the external and internal world, enriching their life experiences. They welcome new experiences and seek more, not shying away from confronting internal and external experiences, sometimes actively pursuing new ones (17). Resilience encompasses a wide range of human capabilities, from recognizing and adapting to various environmental demands to changing behavioral strategies when these strategies jeopardize personal and social functioning (18). Resilience helps maintain a balance among various life domains, making a person aware of their environment and committed to behaviors that align with their personal values. As much as psychological resilience is linked to mental health, its absence is associated with psychological harm (19). Research studies by Ben-Ari et al. (2021), Arslan & Allen (2022), and Davis et al. (2020) show that resilience is related to overall health and vulnerability across a wide range of distresses, including depression, anxiety, and general psychological disturbances (20-22).

Physical and psychological distress in patients with coronary heart disease significantly reduces the quality of life related to health, increases the risk of adverse clinical problems, and healthcare costs (23). Hope, the perceived capacity to create pathways toward desired goals and the perceived motivation to pursue these pathways, along with a positive expectation of achieving these goals, is considered a crucial mechanism in managing and confronting life's challenges, and it is closely related to individuals' mental health, especially patients, as it affects physical health and reduces health-related problems such as anxiety and depression (15). Possessing a sense of hope, particularly in those with chronic diseases, can increase individual motivation to maintain physical, psychological, emotional, and social health during illness (24). Additionally, creating and maintaining hope in psychological interventions for chronic patients is crucial as hope is an effective strategy for motivating and planning therapeutic goals (25). Hopefulness in patients with heart diseases is specifically associated with

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reduced stress and psychological distress and improved physical functioning. Research by Snyder has identified the impact of hope on improving mental health and the quality of life in patients, and other studies have also confirmed the effect of enhancing hope on improving the quality of life in chronic patients like those with cancer, AIDS, and high blood pressure (8). In patients with cardiovascular diseases, a positive correlation between hope and quality of life has been observed (26).

Common psychological interventions, such as motivational interviewing and supportive counseling, do not significantly impact anxiety, physical performance, and depression in patients with coronary heart disease with high blood pressure. Today, interventions based on Acceptance and Commitment Therapy (ACT) have been introduced to enhance psychological and physical health (27). Previously, ACT has been proven globally for treating various psychological problems and disorders, including chronic pain (28), cancer (29), multiple sclerosis (30), among others. In this context, numerous studies have shown that ACT as an intervention is effective in improving quality of life (31), resilience (32), psychological well-being (33), and hope for life (34) in individuals with chronic diseases. The emphasis of ACT on acceptance and living according to accepted personal, spiritual, and other values has made it an ideally suitable treatment for those with chronic diseases (35). A major advantage of this therapeutic approach over other psychotherapies is that it considers motivational aspects along with cognitive ones, aiming for a more significant and lasting therapeutic effect (36).

Given the aforementioned, the purpose of the present research was to examine the effectiveness of Acceptance and Commitment Therapy on psychological well-being, resilience, and hope for life in patients with coronary heart disease and high blood pressure visiting Shahid Rajaei Hospital.

2. Methods and Materials

2.1. Study Design and Participants

The method used in this study was experimental, employing a quasi-experimental design with a pre-test, post-test, and a control group, accompanied by a three-month follow-up period. The study population consisted of all individuals with a documented case of coronary heart disease with high blood pressure at Shahid Rajaei Hospital in Tehran from 2021 to the end of 2022. The sampling method used in this study was purposive, selecting from a number of patients, then, based on the criteria for entry into the study and conducting a pre-test session with a clinical interview overseen by a psychiatrist and based on the DSM-5 diagnostic criteria, 30 individuals (15 for each group) who scored the highest (as baseline) after completing the questionnaires, were selected through purposive sampling and randomly allocated into two groups, an intervention group (15 people) and a control group (15 people). Entry criteria for the study included having coronary heart disease encompassing stable angina, unstable angina, and myocardial infarction, involvement of more than 70% in at least one of the coronary arteries based on angiography, being 6 months past the acute inflammatory phase of the disease or intervention, aged between 35 to 60 years, educational level above fifth grade, and patient consent to participate in the study. Exclusion criteria included suffering from inflammatory diseases, autoimmune disorders, serious psychiatric disorders or taking immunological and psychiatric medications, and unwillingness to participate in the study. The experimental group underwent Acceptance and Commitment Therapy (ACT). ACT was administered weekly for 90 minutes.

2.2. Measures

2.2.1. Psychological Well-being

This scale was designed by Ryff in 1989. The original form of this scale has 120 items. In subsequent studies, a shorter 18-item form was also suggested. This scale is based on a 6-point Likert scale from 1 (strongly disagree) to 6 (strongly agree). The minimum score is 18 and the maximum is 108, and it has 6 components: self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, and personal growth. Each component has 3 questions and one total score. On this scale, questions 3, 4, 5, 9, 10, 13, 16, and 17 are scored inversely. Confirmatory factor analysis showing 0.77 indicates acceptable validity. In Iran, Beyani et al. (2008) reported a correlation coefficient of 0.47 for the Psychological Well-being Scale with the Life Satisfaction Questionnaire. Also, the correlation of this

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version with the original form has been reported up to 89%. In Iran, Parchami Khorram et al. (2022) obtained a Cronbach's alpha reliability for the entire scale at 0.68 (37). The Cronbach's alpha reported in this study was also 0.876.

2.2.2. *Resilience*

This questionnaire was designed by Bond et al. (2011) to measure psychological inflexibility/experiential avoidance, particularly in relation to experiential avoidance and the tendency to engage in action despite unwanted thoughts and feelings. It consists of 7 questions. The questions of this questionnaire assess unwillingness to experience unwanted thoughts and feelings (I am afraid of my feelings) and inability to be in the present and move toward internal values (Painful memories prevent me from having a satisfying life). The questions of this questionnaire are ranked on a 7-point Likert scale (never=1, very rarely=2, rarely=3, sometimes=4, most of the time=5, almost always=6, always=7) with higher scores indicating lower psychological flexibility and higher experiential avoidance. The test-retest reliability of this questionnaire by Bond et al. (2011) was 0.81 and its internal consistency was 0.84 (38). The Cronbach's alpha reported in this study was also 0.744.

2.2.3. *Life Hope*

Snyder et al. (1991) developed the Hope Scale to assess hope. This questionnaire has 12 statements (four statements to measure agency thinking, four to measure pathway thinking, and four distractor statements) and two subscales for agency and pathways, assessing the total hope score. Scoring for this questionnaire is based on an 8-point Likert scale ranging from strongly disagree (1) to strongly agree (8), with the total score derived from summing all statement scores; higher scores indicate more hope and lower scores indicate less hope. The external reliability and validity of the Hope Questionnaire were examined by Snyder and Lopez (2007), reporting a Cronbach's alpha of 0.91 and internal consistency of the test from 0.74 to 0.84. The validity and reliability of the Hope Questionnaire in Iran were studied by Kermani, Khodapanahi, and Heidari (2011), indicating a two-factor structure for the Hope Questionnaire including agency and pathway thinking, with a reported Cronbach's alpha of 0.86 and test-retest reliability of 0.81 (34). The Cronbach's alpha reported in this study was also 0.815.

2.3. *Intervention*

2.3.1. *Acceptance and Commitment Therapy (ACT)*

ACT was conducted over 8 weekly 90-minute sessions according to the treatment protocol by Hayes et al. (2020) (39).

Session 1: Establishing the Therapeutic Framework

The first session involves the therapist introducing themselves and facilitating introductions among group members to foster a supportive group dynamic. The fundamental concepts, principles, and goals of Acceptance and Commitment Therapy (ACT) are outlined, alongside setting the ground rules for all sessions. This session also provides educational information about heart failure and its complications, reviewing strategies to manage and prevent disease-related issues, emphasizing psychological education. Homework assignments are specified at the end.

Session 2: Review and Feedback Integration

The second session starts with a review of the experiences from the previous session, gathering feedback to assess the patients' readiness for change and their expectations from ACT. The concept of creative hopelessness is introduced, which helps to clarify the unhelpfulness of traditional avoidance strategies. The session concludes with a summary and homework assignments to reinforce the day's learnings.

Session 3: Addressing Ineffective Strategies and Introducing Acceptance

This session reviews feedback from the previous meeting and identifies ineffective coping strategies that the patients have been using, emphasizing their futility. The concept of acceptance is explained in detail, differentiating it from resignation, denial, tolerance, and enduring. The discussion includes heart disease challenges and strategies to avoid painful experiences effectively. Homework for the next session is assigned.

Session 4: Committed Action and Cognitive Fusion

In the fourth session, feedback on the previous experiences is reviewed. The focus is on committed action and discussing self as context, which helps in understanding cognitive fusion and its impact on patient behavior. Techniques to disrupt problematic language patterns are introduced. The session aims to divert patients from wasting time on unhelpful thoughts and emotions, concluding with a

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summary and homework that prepares them for the next meeting.

Session 5: Self as Context and Mindfulness

This session revisits experiences and feedback, clarifying the distinction between the self, therapeutic experiences, and behavior. It involves exercises that help participants focus on activities like walking and breathing, maintaining mindfulness, and processing emotions and cognitions without judgment. The session ends with setting homework, summarizing key points, and introducing topics for the next session.

Session 6: Values Identification and Mindfulness Practice

The sixth session continues with feedback review, focusing on identifying personal life values and emphasizing living according to these values. Mindfulness practice is integrated, discussing the importance of being present. The session wraps up with a summary of the discussions, upcoming session topics, and homework assignments.

Session 7: Deepening Values and Goal Setting

Patients review their experiences and provide feedback. This session evaluates each patient's values, deepening the understanding of previously learned concepts. The differences between values and goals are discussed, identifying common mistakes in choosing values. Each group member shares their list of values and potential strategies for living according to them, discussing related goals. Homework is assigned, and the next steps toward achieving these goals are planned.

Session 8: Committed Action and Conclusion

The final session teaches about committed action (understanding commitment and willingness) and identifies behavioral patterns consistent with personal values to strengthen commitment to value-driven behavior. A brief discussion on relapse prevention is included, reviewing homework and summarizing the entire session series. Patients share their experiences and discuss their achievements and unmet expectations. The session concludes with the post-test to assess the impacts of the therapy.

2.4. Data Analysis

Ultimately, data were analyzed using SPSS software, version 26. No specific action was taken regarding the control group. However, to adhere to ethical principles in research, at the end of the study, they were offered ACT and mindfulness-based therapy.

3. Findings and Results

The mean ± standard deviation of the age for the Acceptance and Commitment Therapy (ACT) group was 49.2 ± 6.35, for the mindfulness-based therapy group it was 50.4 ± 7.01, and for the control group, it was 48.7 ± 5.89. Regarding gender, in the ACT group, there were 8 males (53%) and 7 females (47%). In the mindfulness-based therapy group, there were 5 males (33%) and 10 females (66%). In the control group, there were 6 males (40%) and 9 females (60%). Statistical tests indicated that there were no significant differences in demographic variables between the groups.

Table 1

Comparison of Mean and Standard Deviation of Research Variables Scores Among Three Groups at Three Times: Before, After Intervention, and Follow-up

Variable	Group	Pre-test (M ± SD)	Post-test (M ± SD)	Follow-up (M ± SD)
Psychological Well-being	Acceptance and Commitment Therapy	36.4 ± 3.46	44.0 ± 4.53	44.1 ± 4.64
	Control	37.3 ± 5.13	37.6 ± 4.82	37.4 ± 4.71
Resilience	Acceptance and Commitment Therapy	15.2 ± 3.05	15.6 ± 1.29	15.6 ± 1.46
	Control	16.4 ± 2.82	15.5 ± 3.09	15.8 ± 3.27
Hope for Life	Acceptance and Commitment Therapy	37.9 ± 6.85	53.5 ± 6.03	52.4 ± 6.12
	Control	38.9 ± 6.90	39.5 ± 7.24	38.8 ± 6.76

The normality of the distribution of the scores for the variables was assessed using the Shapiro-Wilk test, and the results were not significant, leading to the conclusion that the distribution of the scores for the dependent variables is normal. The assumption of homogeneity of covariances was not confirmed using the Mauchly's test, therefore the

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Greenhouse-Geisser correction was used for repeated measures ANOVA. The Levene's test results showed that the variances of psychological well-being (p = .247, F = 1.39), resilience (p = .594, F = .291), and hope for life (p = .8, F = .066) were not significantly different at the .05 level.

For a precise investigation of the differences and testing of subsidiary hypotheses, univariate analyses were also conducted, the results of which are shown in Table 2.

Table 2

Results of Multivariate Analysis of Variance (MANOVA) Tests in the Research Groups

Variable	Interaction	Test Type	Value	F	DF1	DF2	Significance Level	Eta Squared
Psychological Well-being	Factor * Group	Pillai's Trace	0.860	82.6	2	27	0.001	0.860
		Wilks' Lambda	0.140	82.6	2	27	0.001	0.860
		Hotelling's Trace	6.12	82.6	2	27	0.001	0.860
		Largest Root	6.12	82.6	2	27	0.001	0.860
Resilience	Factor * Group	Pillai's Trace	0.849	75.9	2	27	0.001	0.849
		Wilks' Lambda	0.151	75.9	2	27	0.001	0.849
		Hotelling's Trace	5.62	75.9	2	27	0.001	0.849
		Largest Root	5.62	75.9	2	27	0.001	0.849
Hope for Life	Factor * Group	Pillai's Trace	0.745	39.5	2	27	0.001	0.745
		Wilks' Lambda	0.255	39.5	2	27	0.001	0.745
		Hotelling's Trace	2.92	39.5	2	27	0.001	0.745
		Largest Root	2.92	39.5	2	27	0.001	0.745

As shown in Table 2, with the effect of the pre-tests controlled, Wilks' Lambda is significant at the .01 level. In other words, it can be claimed that there are significant differences between the experimental and control groups in the variables under study. The partial eta squared for psychological well-being supports that 86.0% and for resilience that 84.0% of the variance of the dependent variables is related to the experimental group.

Table 3

Summary of Simple Analysis of Variance for Within-Group and Between-Group Effects

Variable	Source of Variation	Sum of Squares	Degrees of Freedom	Mean Squares	F	Significance Level	Effect Size
Psychological Well-being	Between Subjects						
	Group	372.1	1	372.1	6.06	0.020	0.178
	Error	1717.06	28	61.3			
	Within Subjects						
	Factor	304.2	1.07	284.2	180.9	0.001	0.866
	Factor * Group	274.06	1.07	256.07	163.04	0.001	0.853
	Error (Factor)	47.06	29.9	1.57			
Resilience	Between Subjects						
	Group	1102.5	1	1102.5	60.9	0.001	0.685
	Error	506.4	28	18.08			
	Within Subjects						
	Factor	525.6	1.16	453.3	200.9	0.001	0.878
	Factor * Group	378.4	1.16	326.4	144.6	0.001	0.838
	Error (Factor)	73.2	32.4	2.25			
Hope for Life	Between Subjects						
	Group	5458.5	1	5458.5	14.9	0.001	0.480
	Error	10202.07	28	364.3			
	Within Subjects						
	Factor	177661.7	1.86	954983.4	182.8	0.001	0.803
	Factor * Group	4487.9	1.86	2412.4	4.61	0.016	0.677
	Error (Factor)	27260.1	52.09	523.3			

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The results of the simple analysis of variance with repeated measures based on Greenhouse-Geisser show that the main effect of the factor for psychological well-being (p = .001, F = 180.9, Greenhouse-Geisser = 304.2), resilience (p = .001, F = 200.9, Greenhouse-Geisser = 525.6), and hope for life (p = .001, F = 182.8, Greenhouse-Geisser = 177661.7) are significant at the .01 level. This means that there is a significant difference between the factor scores (pre-test, post-test, and follow-up) for psychological well-being regardless of the group. The interaction effect of the group with the factor (measurement stages) for psychological well-being (p = .001, F = 163.04, Greenhouse-Geisser = 274.06), resilience (p = .001, F = 144.6, Greenhouse-Geisser = 378.4), and hope for life (p = .016, F = 4.61, Greenhouse-Geisser = 4487.9) is also significant at the .01 level. In other words, there is at least a significant difference between two stages of psychological well-being, resilience, and hope for life between the intervention and control groups; therefore, to investigate which stages of measurement in the groups the differences pertain to, pairwise comparison tests within subjects were used, the summary of which is shown in Table 4.

Table 4

Pairwise Comparisons for Self-Efficacy in Repeated Measures

Variable	Source of Variation	Pairwise Comparisons	Sum of Squares	Degrees of Freedom	Mean Squares	F Ratio	Significance Level	Effect Size
Psychological Well-being	Factor	Pre-test vs. Post-test	228.1	1	228.1	174.8	0.001	0.862
		Post-test vs. Follow-up	76.05	1	76.05	202.1	0.001	0.878
	Factor × Group	Pre-test vs. Post-test	212.8	1	212.8	163.1	0.001	0.853
		Post-test vs. Follow-up	61.2	1	61.2	162.8	0.001	0.853
	Error	Pre-test vs. Post-test	36.5	28	1.30			
		Post-test vs. Follow-up	10.5	28	0.376			
Resilience	Factor	Pre-test vs. Post-test	365.06	1	365.06	191.9	0.001	0.873
		Post-test vs. Follow-up	160.5	1	160.5	225.02	0.001	0.889
	Factor × Group	Pre-test vs. Post-test	281.6	1	281.6	148.06	0.001	0.841
		Post-test vs. Follow-up	96.8	1	96.8	135.6	0.001	0.829
	Error	Pre-test vs. Post-test	53.2	28	1.90			
		Post-test vs. Follow-up	19.9	28	0.713			
Hope for Life	Factor	Pre-test vs. Post-test	123051.4	1	123051.4	3937.6	0.001	0.544
		Post-test vs. Follow-up	241793.2	1	241793.2	1763.4	0.001	0.814
	Factor × Group	Pre-test vs. Post-test	1452.03	1	1452.03	12.9	0.001	0.548
		Post-test vs. Follow-up	207.7	1	207.7	6.37	0.018	0.445
	Error	Pre-test vs. Post-test	8750.09	28	312.50			
		Post-test vs. Follow-up	3839.08	28	137.11			

According to the information in Table 4, the main effect of the factor in the pre-test and post-test for psychological well-being (p = .001, F = 174.8), resilience (p = .001, F = 191.9), and hope for life (p = .001, F = 3937.6) is significant. Moreover, the interaction effect of the factor and group for psychological well-being (p = .001, F = 163.1), resilience (p = .001, F = 148.06), and hope for life (p = .001, F = 12.9) is significant. Comparisons of means in Table 2 also show that

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the scores for psychological well-being, resilience, and hope for life in the intervention group compared to the control group in the post-test relative to the pre-test increased, indicating that the treatment based on Acceptance and Commitment was effective. Additionally, the results in Table 5 indicate that the main effect of the post-test and follow-up is significant at the .01 level, and the F obtained related to the post-test and follow-up considering the group is also significant at the .01 level. This means that the difference in follow-up and post-test scores between the two groups of intervention and control is significant; therefore, based on these results, it can be stated that treatment based on Acceptance and Commitment is effective in increasing psychological well-being, resilience, and hope for life in patients with coronary heart disease and high blood pressure.

4. Discussion and Conclusion

The findings demonstrated that Acceptance and Commitment Therapy (ACT) is effective in enhancing psychological well-being, resilience, and hope for life among patients with coronary heart disease and high blood pressure. These results align with the findings of prior researchers (2, 27-30, 32-36, 40-43). The primary mechanism through which ACT impacts psychological well-being can be attributed to its influence on resilience. Unlike treatments that focus on eliminating harmful factors, ACT emphasizes engaging in meaningful activities. ACT is process-oriented and explicitly promotes the acceptance of psychological experiences without judgment and commitment through meaningful, flexible, and adaptive activities. Therefore, when clients are taught to accept their emotions and feelings without resorting to defense mechanisms and can continue their valued cognitive and behavioral activities despite exaggerated internal evaluations, they typically experience reduced psychological stress, which subsequently reduces pain intensity (42). This form of therapy has managed to systematically change patients' values about decision-making and life processes, opening new opportunities for them. By engaging in committed action, participants can clarify their life values and set specific life goals. They are able to anticipate potential obstacles and devise plans to improve both therapeutic outcomes and their overall life circumstances, ultimately helping them to avoid becoming ensnared in emotional and cognitive traps. Ultimately, patients learn to create and enhance a flexible mindset, always focusing on the present, and accepting some therapeutic processes reduces the impact of painful experiences and negative emotional functions and accepting pain (36, 41).

Acceptance and Commitment Therapy, by emphasizing the component of acceptance and the disengagement from avoidance behaviors, aims not to have people avoid thoughts, memories, emotions, and psychological sensitivities. This is evident as some individuals experience intense discomfort in response to pain, while others can endure more severe pain with less complaining and seeking support. This can be attributed to patients' attitudes, beliefs, and expectations about themselves, their problems, their coping resources, and the healthcare system, influencing the expression of pain, disability, and response to treatment, leading to varied perceptions of pain (2, 40). ACT, by discussing distinguishing between issues and describing them, helps patients not be guided by the verbal content of their thoughts but to engage directly with their environment. Indeed, ACT can impact the cycle of flawed beliefs and thoughts by affecting the dimension of thought control, encouraging patients not to flee from their beliefs. Thus, this therapy enhances cognitive well-being (28, 34).

Regarding the effectiveness of ACT on resilience, it can be said that ACT attributes the continuation of disturbing internal events such as thoughts and feelings to the desire not to have them. According to this approach, what patients do is what they have been taught to do, having learned that mastering death anxiety requires learning how to calm down or control and change disturbing and worrying thoughts. The primary goal of ACT is to increase psychological flexibility, or in other words, to reduce experiential avoidance (42). This type of treatment, by focusing on flexibility, clarifying values, and engaging in various exercises, can be effective in increasing self-efficacy and accepting responsibility by the client. From the perspective of ACT, unpleasant thoughts are not eliminated; they are merely taken less seriously. Acceptance, to always be a useful process, fundamentally involves the willingness to experience any degree of distress (41).

In this treatment, initially, an increase in psychological acceptance of mental experiences (thoughts, feelings, etc.) is

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sought, and concurrently ineffective control actions are reduced. Patients learn that any action to avoid or control these unwanted mental experiences is ineffective or has the opposite effect, intensifying them, and must fully accept these experiences without any internal or external reaction to eliminate them. In the second step, psychological awareness is increased; that is, patients become aware of all their psychological states, thoughts, and behaviors at the moment. In the third stage, patients are taught to dissociate themselves from these mental experiences (cognitive disassociation) so that they can act independently of these experiences; fourth, efforts are made to reduce excessive focus on self-conceptualization or a personal narrative (such as being a victim) that the patient has constructed in their mind; fifth, helping the patient to recognize and clearly define their core personal values and convert them into specific behavioral goals (value clarification). Finally, creating motivation for committed action, i.e., activity directed towards clearly defined goals and values along with acceptance of mental experiences, can be related to depressive thoughts, compulsive thoughts, trauma-related thoughts, phobias, or social anxieties, etc. (40, 43).

The results showed that Acceptance and Commitment Therapy effectively enhances hope for life in patients with coronary heart disease and high blood pressure. It can be said that the primary goal of ACT is to maximize the patient's potential for a rich and meaningful life. The theory of ACT believes that what is outside a patient's personal control must be accepted and committed to an action that enriches our lives. The goal of ACT is to help clients create a rich, full, and meaningful life; while life has its sufferings and difficulties, it must be accepted with its hardships (32, 36, 40).

Acceptance and Commitment Therapy, by clarifying relational values and deepening for adaptive action, provides individuals with the opportunity to act in a way that leads them towards greater life satisfaction, and this process can facilitate the enhancement of the quality of life in various physical, psychological, and relational health dimensions. ACT means increasing the acceptance of unhelpful and problematic thoughts and feelings that are uncontrollable, as well as commitment and acting in life based on selected emotional values. It has been attempted to make patients accept their unpleasant thoughts as they are, respond to anxiety and stress with greater flexibility, avoid avoidance, and while accepting unpleasant thoughts and feelings, focus on their goals (Bazarnovi, 2021).

Every research has its limitations. In this study, data collection was conducted through questionnaires, and responses were assessed based on self-reporting, which is dependent on the individual's honesty and self-evaluation. Since this method inherently has limitations such as distraction, carelessness, judgment error, or misinterpretation of instructions, this can affect the research outcomes. Additionally, given the experimental nature of the research and the limited sample size for more precise control of extraneous variables, the low number of samples is a primary limitation of this study that restricts the generalization of the results to larger groups. The lack of overall control of sample individuals between pre-test, post-test, and follow-up, and possible sensitivities that arose in the sample group limit and reduce the power to generalize the test results. For a more definitive and better opinion about the results of this research, it is suggested that other studies be conducted in the same field and in other eldercare homes to provide the possibility of comparison and to also increase the power to generalize the results. Since this research was conducted on patients with coronary heart disease and high blood pressure, it is recommended that the impact of these interventions be examined on other groups of patients suffering from chronic pain and specific diseases and also different age groups. It is suggested that future research compare the impact of these interventions on specific gender groups. It is recommended that the intended research be tested on larger groups to more reliably assess the validity of these therapeutic interventions. In future research, it is suggested that more therapeutic methods be compared and the persistence of therapeutic effect be examined over a longer follow-up period.

Authors' Contributions

A.N. coordinated the research project, designed the study framework, and managed the participant enrollment and data collection. M.R., the corresponding author, significantly contributed to the data analysis and interpretation, oversaw the research methodology, and was responsible for drafting and revising the manuscript. A.R. facilitated the implementation of the Acceptance and Commitment

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Therapy sessions and assisted in data collection and preliminary data analysis. All authors reviewed and approved the final manuscript.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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Declaration of Interest

The authors report no conflict of interest.

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Ethics Considerations

The study placed a high emphasis on ethical considerations. Informed consent obtained from all participants, ensuring they are fully aware of the nature of the study and their role in it. Confidentiality strictly maintained, with data anonymized to protect individual privacy. The study adhered to the ethical guidelines for research with human subjects as outlined in the Declaration of Helsinki.

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