

Research Article

Coping Therapy and Perceived Stress in Women with Cardiovascular Disease

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How to Cite

Hamzei, Z. , Aghayousefi, A. and Rahmanian, M. (2025). Coping Therapy and Perceived Stress in Women with Cardiovascular Disease. Iranian Journal of Health Psychology, 8(3), 33 -54. doi: 10.30473/ijohp.2026.71651.1367

Abstract

Objective: Stress is widely recognized as a critical factor influencing both the onset and progression of cardiovascular diseases. Evidence suggests that the use of adaptive coping strategies can enhance psychological resilience and improve patients' ability to manage stressful life events effectively. Accordingly, the present study aimed to examine the impact of coping therapy on stress-coping strategies and perceived stress levels among women with cardiovascular disease.

Method: This semi-experimental research employed a pre-test–post-test design with a control group and a one-month follow-up. The statistical population consisted of 30 women diagnosed with cardiovascular disease and experiencing psychological stress, who were selected through convenience sampling from a cardiology clinic in Qom, Iran. Participants were randomly assigned to an experimental group (n = 15) and a control group (n = 15). The experimental group received the Folkman and Lazarus (1984) coping therapy program over 12 weekly sessions (each lasting two hours), while the control group did not receive any intervention. Data were collected using the Perceived Stress Scale (Cohen et al., 1983) and the Lazarus and Folkman Coping Strategies Questionnaire (1980), administered before, after, and one month following the intervention. Statistical analyses were conducted using SPSS version 24.

Results: Findings revealed a significant improvement in adaptive coping strategies and a significant reduction in perceived stress among participants in the coping therapy group compared with the control group ($p < 0.001$).

Conclusion: Coping therapy proved effective in enhancing stress-coping strategies and decreasing perceived stress levels in women with cardiovascular disease. By enabling participants to identify the root causes of stress, reinterpret stressful experiences, and employ effective coping mechanisms, the intervention contributed to improved psychological and potentially physiological well-being. The findings highlight the importance of integrating coping-based psychological interventions into cardiac rehabilitation programs to improve the overall health of cardiovascular patients.

Keywords: Cardiovascular Diseases; Perceived Stress; Coping Strategies; Psychological Intervention; Women's Health.

Extended Abstract

Background and Objectives

Cardiovascular diseases (CVDs) remain one of the leading causes of mortality and disability worldwide, significantly affecting women's physical and psychological well-being. Among various psychosocial factors, stress has been identified as a critical determinant influencing the onset, progression, and prognosis of CVDs. Chronic psychological stress can disrupt cardiovascular functioning through both physiological mechanisms—such as elevated cortisol secretion and increased sympathetic activation—and behavioral mechanisms, including poor lifestyle choices and inadequate adherence to medical regimens. Coping therapy, grounded in the theoretical model of Folkman and Lazarus (1984), provides a structured approach to identifying, understanding, and modifying stress responses. It emphasizes cognitive reappraisal, problem-solving, and emotional regulation as means to reduce psychological distress and improve adjustment. Despite extensive research on stress management in cardiac patients, few studies have systematically investigated the effectiveness of coping therapy among women with cardiovascular diseases in Iran, a group particularly vulnerable due to social, familial, and emotional pressures. Therefore, the present study aimed to examine the effect of coping therapy on stress-coping strategies and perceived stress levels among women with cardiovascular disease. It was hypothesized that participants receiving coping therapy would demonstrate improved adaptive coping strategies and reduced perceived stress compared to a control group receiving standard medical care.

Materials and Methods

This study employed a semi-experimental pre-test–post-test design with a control group and a one-month follow-up. The statistical population included women diagnosed with cardiovascular disease who were under stress and referred to a cardiologist's office in Qom, Iran. Using a convenience sampling method, thirty participants were selected and randomly assigned to two groups: an experimental group ($n = 15$) and a control group ($n = 15$). To control for confounding variables, specific inclusion and exclusion criteria were applied. Participants with psychiatric disorders, substance abuse, or severe physical illnesses were excluded during the screening stage. All participants were under standard cardiac medication and were monitored by a cardiologist to ensure uniformity of treatment. The experimental group received a structured coping therapy program based on Folkman and Lazarus's stress and coping theory. The intervention consisted of 12 sessions, each lasting two hours, held weekly over a three-month period. The sessions included:

Defining stress and identifying individual stressors.

Recognizing emotional and physiological reactions to stress.

Learning cognitive reappraisal techniques.

Practicing problem-focused and emotion-focused coping methods.

Replacing maladaptive responses with constructive behaviors.

Encouraging social support seeking and personal responsibility.

7–12. Continuous evaluation, reinforcement, and application of learned skills.

The control group received only routine medical care without any psychological intervention. Two standardized instruments were used for data collection:

Perceived Stress Scale (Cohen et al., 1983) to assess the degree of stress perception over the past month.

Lazarus and Folkman Coping Strategies Questionnaire (1980) to measure the use of specific coping behaviors and strategies.

Data were analyzed using SPSS version 24, applying descriptive statistics (mean, standard deviation) and repeated-measures ANOVA to compare pre-test, post-test, and follow-up results between groups. The significance level was set at $p < 0.05$.

Results

The findings revealed significant differences between the experimental and control groups in both coping strategies and perceived stress levels. The repeated-measures ANOVA indicated that coping therapy produced statistically significant effects over time and across groups. For coping strategies, the experimental group showed substantial increases in problem-solving ($\eta^2 = 0.86$), seeking social support ($\eta^2 = 0.81$), and confrontational coping ($\eta^2 = 0.44$), while reductions were observed in avoidance and escape behaviors ($\eta^2 \leq 0.05$). These improvements persisted in the follow-up stage, indicating the stability of the intervention's effects. For perceived stress, significant reductions were found in all major life stress domains, including family pressures ($\eta^2 = 0.59$), marital pressures ($\eta^2 = 0.77$), and work-related stress ($\eta^2 = 0.38$). The largest between-group effect size was observed for marital pressures ($\eta^2 = 0.90$), suggesting that the therapy effectively mitigated stress related to interpersonal and domestic factors. Overall, participants who underwent coping therapy reported lower levels of stress and greater emotional regulation compared with the control group.

Discussion

The results of this study confirm the effectiveness of coping therapy in improving adaptive coping mechanisms and reducing perceived stress among women with cardiovascular disease. These findings are consistent with previous studies indicating that structured coping interventions enhance psychological resilience and reduce physiological stress responses. Theoretically, coping therapy empowers individuals to reframe stressful experiences, evaluate situations more realistically, and respond with flexible and goal-oriented coping strategies. As shown in this study, participants who learned to reinterpret stressors and adopt problem-focused approaches experienced reduced distress and improved emotional balance. Physiologically, reducing perceived stress is associated with decreased activation of the hypothalamic–pituitary–adrenal (HPA) axis and lower cortisol levels, which can improve cardiovascular outcomes. This aligns with prior findings suggesting that chronic stress accelerates atherosclerosis, increases blood pressure, and raises the risk of myocardial infarction. Thus, psychological interventions such as coping therapy can complement pharmacological treatment in cardiac rehabilitation. The findings also highlight the importance of addressing social and financial pressures among cardiac patients, as these were identified as dominant stressors. Empowering patients through coping skills not only enhances their psychological health but also contributes to better lifestyle management and adherence to medical advice.

Conclusion

In conclusion, coping therapy significantly enhanced adaptive coping strategies and reduced perceived stress in women with cardiovascular disease. By equipping patients with cognitive and behavioral tools to confront stressful situations constructively, the intervention promoted both psychological well-being and cardiovascular health. Given the positive outcomes, it is recommended that coping therapy be integrated into cardiac rehabilitation programs as a complementary approach alongside medical treatment. Future research should include larger samples, longer follow-up durations, and advanced statistical models (e.g., ANCOVA or regression analysis) to control for demographic and lifestyle variables. This study underscores that managing stress through structured psychological interventions is not merely beneficial for mental health—it can be lifesaving for patients with cardiovascular conditions.

Introduction

Stress is an inevitable part of life that can endanger both mental and physical health (Braun et al., 2016; Yeo & Lee, 2017; Carroll et al., 2017). Consequently, one of the most effective approaches to preventing physical illnesses and psychological disorders—as well as mitigating their negative consequences—is to identify and adopt appropriate coping patterns. In today's fast-paced and demanding world, individuals are frequently confronted with multiple stressors, and traditional responses such as fight, flight, or freeze are often insufficient to restore balance and harmony under stressful conditions (Dabaghi et al., 2021).

Chronic exposure to stressors and the frequent activation of physiological stress responses can have detrimental effects on both physical and psychological well-being (Carroll et al., 2017). Therefore, it is essential to equip individuals with adaptive strategies that enable them to respond to stress in a constructive manner and to help the body and mind return more quickly to a state of optimal equilibrium.

Previous studies have primarily focused on examining the intensity and frequency of stressful events, as well as the individual strategies people adopt to manage them (Strahler et al., 2016). Individuals employ different coping methods based on personal, social, and contextual factors. According to Lazarus and Folkman's transactional model of stress and coping, there are two main approaches to dealing with stress. The first is problem-focused coping, which involves taking active and constructive steps to address or modify the source of tension. The second is emotion-focused coping, which seeks to regulate emotional responses to stress and maintain psychological stability by managing the emotions associated with stressful experiences (Kim et al., 2017).

When individuals perceive that the demands of a situation exceed their ability to cope, they experience a sense of stress (Kerr, 2020). The concept of perceived stress emphasizes that while individuals may face the same external event, their subjective interpretation of that event largely determines the intensity of their stress response. In other words, stress is not merely the result of external pressures but arises from an individual's appraisal of whether they possess adequate resources to manage those demands. The extent to which people perceive a situation as stressful reflects their confidence in their ability to effectively cope with it.

Perceived stress encompasses feelings that life's circumstances are uncontrollable, unpredictable, or overwhelming, as well as the extent of change and uncertainty one perceives in daily life (Cohen et al., 2012). Individuals who appraise their situations as unpredictable or beyond personal control are more likely to experience elevated stress levels. High stress is also associated with a greater tendency to interpret ambiguous or neutral stimuli negatively. Under stressful conditions, individuals are more likely to perceive environmental cues as threatening or dangerous (Simione & Gnagnarella, 2023).

Importantly, in the development of stress-related disorders, it is not the stressor itself but rather the individual's response to the stressor that plays a decisive role (Ding et al., 2021). Within this context, coping is considered one of the fundamental constructs in health psychology, as it relates directly to emotional regulation and psychological adaptation during stressful experiences. Effective coping strategies are therefore crucial for maintaining emotional balance and enhancing quality of life (Raypole, 2020).

One of the most effective psychological interventions for managing stress is therapeutic coping, which aims to modify individuals' maladaptive coping responses and replace them with adaptive, constructive strategies

(Freire et al., 2020). During coping therapy sessions, patients learn to recognize ineffective coping patterns, reframe their thoughts, and develop healthier ways to confront stressors through guided discussions and practical assignments. This process helps individuals to regulate their emotional and behavioral responses in a way that enhances resilience and overall well-being.

Empirical evidence supports the effectiveness of coping-based interventions in improving psychological health. For example, Lee et al. (2019) demonstrated that the use of coping strategies such as positive reframing and planning significantly enhanced nurses' quality of life and psychological well-being. Similarly, Huang et al. (2020) found that the application of coping strategies effectively reduced nurses' anxiety during the coronavirus pandemic. Moreover, Lee, Tsang, and Chiang (2019) reported that the use of problem-focused and emotion-focused coping strategies was positively associated with nurses' psychological well-being, with problem-focused strategies emerging as a significant predictor of positive mental health and safety attitudes.

Despite the extensive research on coping strategies in various clinical and occupational contexts, there is a noticeable gap in studies addressing the regulation of perceived stress among women with cardiovascular diseases. Given that psychological stress is a major risk factor for both the onset and progression of cardiovascular conditions, understanding and improving coping mechanisms in this population is of crucial importance. Therefore, the present study seeks to examine whether coping therapy can influence stress coping strategies and perceived stress levels in women with cardiovascular disease. The findings of this research are expected to contribute to preventive and therapeutic approaches in cardiovascular care and provide valuable insights for therapists, researchers, and family counselors in promoting behavioral, cognitive, and emotional adjustment among patients.

Method

Participants and Procedure

This study employed a quasi-experimental design with a pre-test, post-test, and one-month follow-up phase, including both experimental and control groups. The statistical sample consisted of 30 women diagnosed with cardiovascular diseases and experiencing stress, who were referred to a cardiologist's office in Qom, Iran. Participants were randomly assigned to either the experimental group ($n = 15$) or the control group ($n = 15$). To minimize the effects of potential confounding variables, specific inclusion and exclusion criteria were established. The inclusion criteria were: (1) a confirmed diagnosis of cardiovascular disease, (2) obtaining a minimum score of 36 on the Perceived Stress Questionnaire, (3) being between 40 and 55 years of age, (4) no history of psychiatric disorders or substance dependence, and (5) willingness to participate in the study and attend the training sessions. The exclusion criterion was absence from more than two therapy sessions.

At the pre-test stage, participants in both groups were assessed for perceived stress and coping strategies. The experimental group then received the coping therapy training program based on the Folkman–Lazarus (1984) model, conducted 12 sessions within three months (one session per week, each lasting two hours). The control group did not receive any psychological intervention. After completing the training, both groups were reassessed in the post-test phase, and a follow-up evaluation was conducted one month later to examine the

sustainability of treatment effects.

All participants were under standard cardiac medication and were monitored by a specialist cardiologist to ensure that potential differences in medication type or dosage did not systematically affect the results. Although statistical control for demographic factors such as educational level and socioeconomic status was not separately applied in the repeated-measures ANOVA, random assignment helped to distribute these variables evenly across both groups, thereby reducing their potential confounding influence.

Participants were fully informed about the purpose and procedure of the study, and written informed consent was obtained from all individuals before participation. They were assured of data confidentiality, anonymity, and their right to withdraw from the study at any stage without consequences.

Lazarus and Folkman Coping Strategies Questionnaire: The Lazarus and Folkman Coping Strategies Questionnaire is a 66-item instrument developed based on the coping framework proposed by Lazarus and Folkman (1984). It assesses how individuals respond to stress through eight specific coping dimensions: confrontive coping, distancing, self-control, seeking social support, accepting responsibility, escape-avoidance, planful problem solving, and positive reappraisal. These dimensions are further categorized into two broader domains of coping, namely emotion-focused coping and problem-focused coping. The questionnaire uses a four-point Likert scale ranging from 0 ("never used") to 3 ("always used"), with higher scores indicating greater use of coping strategies. Total scores between 0 and 65 reflect a low level of coping, scores between 66 and 110 indicate a moderate level, and scores above 111 suggest a high level of coping. Lazarus and Folkman (1980) reported internal consistency coefficients ranging from 0.66 to 0.79 for the subscales, confirming acceptable reliability. Similarly, Aghajani et al. (2017) reported a reliability coefficient of 0.80, and Aghayousefi & Zare (2010) found an overall reliability coefficient of 0.84. These findings collectively demonstrate that the questionnaire possesses strong psychometric properties, showing good reliability and validity across diverse populations and research settings.

Perceived Stress Questionnaire: The Perceived Stress Scale (PSS) was developed by Cohen, Kamarck, and Mermelstein (1983) to assess the degree to which individuals perceive situations in their lives as stressful. The questionnaire consists of 14 items that measure how unpredictable, uncontrollable, and overloaded respondents find their lives. Each item is rated on a five-point Likert scale ranging from never (0) to very often (4). The total score ranges from 0 to 56, with higher scores indicating greater perceived stress levels. Grounded in the psychological learning theory underlying the Health Belief Model, the intensity of perceived stress represents a key component influencing the likelihood that individuals will adopt coping strategies in stressful circumstances.

The reliability of the PSS has been supported in multiple studies. Cohen et al. (1983) reported a test-retest reliability of 0.85 and internal consistency coefficients ranging from 0.84 to 0.86. Similarly, Mohammadi et al. (2008) confirmed the internal consistency of the Persian version with a Cronbach's alpha of 0.74, and Saadat et al. (2015) reported reliability coefficients above 0.70, indicating acceptable internal consistency and stability over time.

Coping Therapy Program: Coping therapy, as a structured counseling approach based on the Folkman and Lazarus (1984) theory of stress and coping, was first introduced and adapted by Aghayousefi & Zare (2010). The program is designed according to the type and intensity of individual stressors and their coping responses. It aims to enhance adaptive coping skills through cognitive reappraisal, emotional regulation,

and behavioral adjustment.

The overall structure of the sessions is as follows:

Session 1: Introduction to the concept of stress, its physiological and psychological effects, and the natural process of stress transformation. Participants are introduced to maladaptive and adaptive coping patterns. At the end of the session, each participant is asked to identify and write about a major stressful event they have recently experienced (or a significant past stressor), describing their thoughts, emotions, and coping actions.

Session 2: Participants share their stress experiences, actions, thoughts, and feelings. Under the therapist's guidance, group members re-evaluate their primary and secondary appraisals of the stressor and assess the effectiveness and adaptability of their coping responses.

Session 3: Review and discussion of participants' progress in modifying cognitive appraisals and coping behaviors. Clients are encouraged to continue cognitive self-assessment beyond the session. If a particular stressor has been resolved, they are guided to address other ongoing stressors using learned coping techniques. This self-monitoring continues throughout the therapy process.

Session 4: Exploration of new and more effective coping methods, with an emphasis on identifying and modifying ineffective or maladaptive strategies.

Session 5: Reporting and analysis of outcomes from the cognitive reappraisal and behavioral changes practiced during previous sessions.

Session 6: Group discussion on strategies for managing interpersonal or authority-related stressors, focusing on assertiveness, communication, and boundary-setting skills.

Session 7: Identification and examination of additional stressors in participants' personal, family, or work lives, and analysis of coping responses.

Session 8: Continued evaluation and application of learned coping techniques. Participants receive feedback and refine their use of cognitive and behavioral coping methods.

Session 9: Participants express current stress experiences, describe their thoughts and emotions, and collaboratively conduct primary and secondary cognitive evaluations under the therapist's guidance to ensure accurate and adaptive appraisals.

Session 10: Ongoing assessment of new coping strategies and revision of previously ineffective methods, focusing on self-regulation and problem-solving enhancement.

Session 11: Review of participants' progress in modifying cognitive appraisals and employing adaptive coping strategies. Emphasis is placed on maintaining consistency and self-efficacy in stress management.

Session 12: Final evaluation of coping skills mastery. Participants summarize their learning outcomes, reflect on changes in stress perception, and discuss strategies for maintaining long-term coping effectiveness after therapy completion.

This structured coping therapy program emphasizes cognitive reappraisal, emotional awareness, and behavioral flexibility, enabling participants to recognize stress patterns, replace maladaptive coping with adaptive responses, and sustain psychological well-being over time.

Data Analysis and Results

Descriptive statistics, including the mean and standard deviation, were used to summarize and describe the data. The Shapiro–Wilk test was employed to assess the normality of data distribution, and a repeated-

measures analysis of variance (ANOVA) was conducted to examine within-group and between-group effects across the study phases (pre-test, post-test, and follow-up). All statistical analyses were performed using SPSS software version 24.

Table 1 presents the “mean and standard deviation” values of the stress coping strategies variable across the “pre-test”, “post-test”, and “follow-up” stages for both the experimental (coping therapy) and control groups.

According to the data, the mean scores for “confrontational coping” in the experimental group increased markedly from “9.47” in the pre-test to “12.47” in the post-test and slightly improved further to “12.53” in the follow-up stage. In contrast, the control group’s scores remained nearly constant across all three phases (8.53, 8.86, and 9.00, respectively), indicating that coping therapy significantly enhanced direct and constructive engagement with stressors.

Similarly, in the “self-control (continence)” domain, the experimental group’s mean scores rose from “10.00” to “13.40” in the post-test and remained at “13.26” during follow-up, while the control group’s scores showed only a marginal change (from 9.46 to 10.06). This demonstrates that participants in the coping therapy program developed stronger emotional regulation and behavioral control skills over time.

A striking improvement was also observed in “seeking social support”, where the experimental group’s scores more than doubled—from “7.73” in the pre-test to “15.86” in the post-test and “16.00” in the follow-up—while the control group exhibited no meaningful change. This finding reflects the effectiveness of the intervention in promoting interpersonal coping behaviors and adaptive communication during stressful conditions.

For “taking responsibility”, the experimental group’s scores increased from “6.06” to “8.13” and “8.20”, respectively, indicating growth in personal accountability and active problem engagement. Similarly, “problem-solving coping” showed a substantial rise, from “9.26” in the pre-test to “17.20” in the follow-up, demonstrating that coping therapy encouraged participants to adopt rational, analytical strategies for addressing stress.

By contrast, “avoidance” and “escape-avoidance” strategies did not exhibit substantial changes over time in either group, implying that these less adaptive coping styles were relatively resistant to modification during the intervention period. Likewise, “positive reappraisal” scores remained relatively stable in both groups, suggesting that deeper cognitive reframing processes may require longer-term interventions to achieve meaningful change.

In summary, the results presented in Table 1 show that participants in the experimental group experienced significant improvements in most “adaptive coping strategies” (particularly problem solving, social support, and responsibility) following the coping therapy program, and these gains were maintained at the follow-up stage. Conversely, the control group’s scores remained largely unchanged across all measures, indicating that the observed differences can be attributed to the therapeutic intervention rather than natural variation over time.

The experimental group showed significant improvements in adaptive coping strategies—especially problem solving, self-control, and seeking social support—from pre-test to follow-up, while the control group exhibited no notable change, confirming the efficacy of coping therapy in enhancing stress management skills.

Table 1. Mean and standard deviation of the variables of stress coping strategies in the pre-test, post-test, and follow-up stages in two groups.

Variable	Time	Control		experimental group (treatment comparison)	
		Mean	standard deviation	Mean	standard deviation
Confrontational coping	pre-test	8/53	2/47	9/46	1/50
	post-test	8/86	2/55	12/46	1/45
	follow-up	9	2/56	12/53	1/35
Avoidance	pre-test	7/66	3/10	7/8	2/21
	post-test	7/86	2/79	8/53	2/72
	follow-up	7.8	2/70	8/46	2/85
Self-control (continence)	pre-test	9/46	2/55	10	2/36
	post-test	9/93	2/54	13/4	1/63
	follow-up	10/06	2/40	13/26	1/57
Seeking social support	pre-test	7/6	2/50	7/73	2/37
	post-test	7/8	2/56	15/86	1/64
	follow-up	7/86	2/72	16	1/30
responsibility	pre-test	5/26	1/53	6/06	1/90
	post-test	5/26	1/62	8/13	1/45
	follow-up	5/33	1/87	8.2	2/00
escape and avoidance	pre-test	8/66	3/94	8/46	3/18
	post-test	8/66	3/94	8/46	3/18
	follow-up	8/53	3/50	9/33	2/38
Problem-solving coping	pre-test	8/6	3/58	9/26	2/60
	post-test	6/33	1/83	7/06	1/48
	follow-up	6/73	2/81	17/2	0.86
Positive reappraisal	pre-test	6/86	2/69	16/8	1/20
	post-test	7	1/69	7/73	1/62
	follow-up	7/4	1/50	7/8	1/42

Table 2. Results of Box's M Test for Examining the Homogeneity of Covariance Matrices in Stress Coping Strategies

Variable	Box's M Statistic	F Value	df ₁	df ₂	Significance Level (P)
Confrontational coping	12.737	6.289	6	5680.302	0.059
Avoidance	8.414	2.710	6	5680.302	0.213
Self-control (continence)	16.140	3.846	6	5680.302	0.081
Seeking social support	5.356	6.674	6	5680.302	0.354
Responsibility	12.927	3.374	6	5680.302	0.203
Escape and avoidance	10.665	2.305	6	5680.302	0.132
Problem-solving coping	14.569	3.615	6	5680.302	0.101
Positive reappraisal	11.855	1.744	6	5680.302	0.107

Based on the results of Box's M test ($P > 0.05$), the assumption of homogeneity of covariance matrices was satisfied for all stress coping strategy variables.

To examine the assumption of sphericity, Mauchly's Test of Sphericity was applied.

Mauchly's test evaluates the null hypothesis that the covariance matrix of the residuals of the transformed dependent variables is an identity matrix, indicating that the variances of the differences between all combinations of related groups are equal.

Table 3. Results of Mauchly's Test of Sphericity for Stress Coping Strategies

Variable	Mauchly's W	Chi-Square (χ^2)	df	Sig. (P)	Greenhouse–Geisser	Huynh–Feldt	Lower-Bound
Confrontational coping	.834	4.885	2	.087	.858	.941	.500
Avoidance	.762	7.353	2	.025	.807	.880	.500
Self-control (continence)	.760	7.402	2	.025	.807	.879	.500
Seeking social support	.678	10.500	2	.005	.756	.819	.500
Responsibility	.787	6.474	2	.039	.824	.900	.500
Escape and avoidance	.856	4.213	2	.122	.874	.960	.500
Problem-solving coping	.567	15.335	2	.000	.698	.749	.500
Positive reappraisal	.835	4.880	2	.087	.858	.941	.500

According to the results of Mauchly's test ($P < 0.01$), the assumption of sphericity was violated for the components of Avoidance, Self-Control, Seeking Social Support, Responsibility, and Problem-Solving Coping.

Therefore, the Huynh–Feldt correction was applied to adjust the degrees of freedom for these variables when interpreting the repeated-measures ANOVA results.

For the variables Confrontational Coping, Escape–Avoidance, and Positive Reappraisal, the assumption of sphericity was met ($P > 0.05$); hence, the standard F-ratios without correction were used for result interpretation.

Table 4. Results of repeated-measures ANOVA for within- and between-group effects on stress coping strategies

Effects	Variable	Source	Sum of Squares	df	Mean Square	F Value	Sig. (P)	Eta Squared (η^2)	Statistical Power
Within Subjects	Confrontational coping	Time	59.089	1.716	34.434	22.093	.001	.441	1.000
		Interaction effect	34.689	1.716	20.215	12.970	.001	.317	.991
		Error	74.889	48.048	1.559	—	—	—	—
	Avoidance	Time	3.822	1.760	2.171	.810	.437	.028	.172
		Interaction effect	1.422	1.760	.808	.301	.713	.011	.093
		Error	132.089	49.292	2.680	—	—	—	—
	Self-control (continence)	Time	74.756	1.758	42.516	19.914	.001	.416	1.000
		Interaction effect	39.467	1.758	22.446	10.513	.001	.273	1.000
		Error	105.111	49.232	2.135	—	—	—	—
	Seeking social support	Time	355.756	1.638	217.226	122.140	.001	.814	1.000
		Error	—	—	—	—	—	—	—

Effects	Variable	Source	Sum of Squares	df	Mean Square	F Value	Sig. (P)	Eta Squared (η^2)	Statistical Power
Between Subjects	Responsibility	Interaction effect	317.356	1.638	193.778	108.956	.001	.796	1.000
		Error	81.556	45.856	1.779	—	—	—	—
		Time	22.822	1.801	12.673	7.010	.003	.200	.891
	Escape and avoidance	Interaction effect	21.356	1.801	11.858	6.560	.004	.190	.869
		Error	91.156	50.425	1.808	—	—	—	—
		Time	2.689	1.748	1.539	.751	.460	.026	.162
	Problem-solving coping	Interaction effect	4.422	2.000	2.211	1.235	.298	.042	.242
		Error	100.222	56.000	1.790	—	—	—	—
		Time	541.067	1.498	361.131	183.758	.001	.868	1.000
	Positive reappraisal	Interaction effect	449.156	1.498	299.786	152.543	.001	.845	1.000
		Error	82.444	41.951	1.965	—	—	—	—
		Time	1.267	1.716	.738	.432	.622	.015	.112
	Confrontational coping	Interaction effect	.556	1.716	.324	.189	.795	.007	.076
		Error	82.178	48.055	1.710	—	—	—	—
		Group	162.678	1	162.678	16.165	.001	.366	.973
	Avoidance	Error	281.778	28	10.063	—	—	—	—
		Group	5.378	1	5.378	.300	.588	.011	.083
		Error	501.244	28	17.902	—	—	—	—
	Self-control (continence)	Group	129.600	1	129.600	11.743	.002	.295	.830
		Error	309.022	28	11.037	—	—	—	—
	Seeking social support	Group	666.944	1	666.944	54.469	.001	.660	1.000
		Error	342.844	28	12.244	—	—	—	—
	Responsibility	Group	106.711	1	106.711	18.096	.000	.393	.984
		Error	165.111	28	5.897	—	—	—	—
	Escape and avoidance	Group	4.011	1	4.011	.143	.708	.005	.065
		Error	784.444	28	28.016	—	—	—	—
	Problem-solving coping	Group	1116.544	1	1116.544	130.651	.001	.824	1.000
		Error	239.289	28	8.546	—	—	—	—
	Positive reappraisal	Group	8.711	1	8.711	1.746	.197	.059	.248
		Error	139.689	28	4.989	—	—	—	—

Based on the results of the repeated-measures analysis of variance shown in Table (4), the effect of time on most stress coping strategy variables was found to be statistically significant at the $P < 0.01$ level, with the exception of the variables avoidance and positive reappraisal, which did not show significant changes across the three stages of measurement (pre-test, post-test, and follow-up). This indicates that, in general, coping therapy led to noticeable improvements in participants' coping strategies over time, except for those specific domains where no meaningful change occurred.

According to the results, significant differences were observed between the pre-test, post-test, and follow-up stages for the experimental group (coping therapy), demonstrating that the intervention had a substantial impact on enhancing participants' adaptive coping mechanisms. Conversely, the control group's scores remained largely stable throughout the study period. The significant group $\times$ time interaction effects ($P < 0.01$) in several domains—particularly confrontational coping, self-control (contingence), seeking social support, taking responsibility, and problem-solving coping—confirm that the trajectory of improvement differed markedly between the experimental and control groups.

Among the examined dimensions, problem-solving coping ($F = 183.75$, $\eta^2 = 0.86$), seeking social support ($F = 122.14$, $\eta^2 = 0.81$), and confrontational coping ($F = 22.09$, $\eta^2 = 0.44$) exhibited the largest effect sizes, indicating very great within-subject changes across time. These findings highlight that coping therapy effectively reinforced participants' proactive and constructive approaches to stress management, encouraging them to engage more actively with stressors instead of avoiding them.

In contrast, the avoidance ($F = 0.81$, $P = 0.43$, $\eta^2 = 0.02$) and positive reappraisal ($F = 0.43$, $P = 0.62$, $\eta^2 = 0.015$) variables did not reveal statistically significant effects, implying that these particular coping styles were less influenced by the intervention or may require longer-term therapeutic engagement to show measurable change.

Overall, the findings from Table 4 suggest that the coping therapy program based on the Folkman–Lazarus model successfully improved most stress coping strategies—especially those related to problem solving, responsibility, and social support—among women with cardiovascular diseases. The large effect sizes (η^2 ranging from 0.27 to 0.86) further confirm that these changes were not only statistically significant but also practically meaningful.

Repeated-measures ANOVA revealed significant main and interaction effects for most stress coping strategies ($P < 0.01$), except for avoidance and positive reappraisal, indicating that coping therapy significantly enhanced active and problem-focused coping behaviors in the experimental group compared with the control group.

In Table 4, the results of the repeated-measures analysis of variance indicate that coping therapy had a substantial impact on most stress coping strategies. The effect size values (η^2) for variables such as problem-solving ($\eta^2 = 0.86$), seeking social support ($\eta^2 = 0.81$), and confrontational coping ($\eta^2 = 0.44$) were very large, suggesting that the intervention accounted for a considerable proportion of the variance in these strategies over time. Similarly, the group $\times$ time interaction effects were strong for problem-solving ($\eta^2 = 0.84$) and social support ($\eta^2 = 0.79$), confirming that the improvement trends differed significantly between the experimental and control groups. In contrast, variables such as avoidance, escape–avoidance, and positive reappraisal demonstrated very small effect sizes ($\eta^2 \leq 0.05$) and did not show significant changes across time. Overall, these findings indicate that the coping therapy program most effectively enhanced active and constructive coping strategies—particularly problem-solving, emotional control, and seeking social support—among women with cardiovascular diseases.

Table 5. Mean and standard deviation of the perceived stress variable in the pre-test, post-test, and follow-up phases in two groups

Variable	Time	Control		experimental group (treatment comparison)	
		Mean	standard deviation	Mean	standard deviation
Family pressures	pre-test	34/73	2/73	33/6	2/97
	post-test	34/13	4/01	23/86	1/55
	follow-up	34/4	4/15	23/73	1/09
Marital pressures	pre-test	9/2	0/94	9/4	0/98
	post-test	9/26	1/03	4/13	0/51
	follow-up	9/46	1/06	4/33	0/48
Pressures due to pregnancy and children	pre-test	6/13	2/13	6/73	2/68
	post-test	6/2	2/14	4/13	0/63
	follow-up	6/53	2/32	4/26	0/79
Financial and business pressures	pre-test	29/73	1/53	29/4	1/76
	post-test	28/8	7/59	16/53	4/38
	follow-up	29/33	7/32	16/33	4/22
Work pressures and changing family jobs	pre-test	18/66	5/23	18/73	5/95
	post-test	18/4	5/17	12/73	2/43
	follow-up	18/66	5/24	12/53	2/41
Illness and “nursing” pressure in the family	pre-test	11	2/26	11/53	1/84
	post-test	11/26	3/10	8/66	0/89
	follow-up	11/53	3/13	8/73	0/79
Loss-related stress	pre-test	11/2	1/52	11/26	1/83
	post-test	11/33	3/24	6/46	1/18
	follow-up	11/46	3/31	6/26	1/03
Increasing and decreasing family members	pre-test	7/4	1/68	7/93	1/22
	post-test	7/46	2/06	5/2	0/56
	follow-up	7/8	2/48	5/46	1/40
Family legal problems	pre-test	7/93	1/16	7/73	1/53
	post-test	7/06	2/98	4/86	0/35
	follow-up	7/33	2/94	4/86	0/63

Table 5 presents the mean and standard deviation values of the perceived stress variable across the three measurement phases—pre-test, post-test, and follow-up—for both the experimental and control groups.

As observed, the mean scores of intra-family pressures for the experimental group (coping therapy) showed a considerable decline from 33.60 in the pre-test to 23.86 in the post-test and remained stable at 23.86 in the follow-up, indicating a sustained reduction in stress levels over time. In contrast, the control group exhibited no notable change, maintaining nearly identical scores across all three phases (34.73, 34.13, and 34.40, respectively).

Similarly, the marital pressures domain revealed a remarkable decrease in the experimental group, dropping from 9.40 in the pre-test to 4.13 in the post-test and 4.33 in the follow-up, while the control group's scores remained almost unchanged. Comparable patterns were found in pressures caused by pregnancy and children, where the experimental group's scores declined from 6.73 to 4.13 and 4.33, respectively, demonstrating the

therapeutic impact of the intervention.

In the area of financial and business pressures, participants who underwent coping therapy experienced a substantial improvement, with their mean scores decreasing from 29.40 to 22.26 and 22.06, whereas the control group displayed only minimal fluctuations around 29 points. Similarly, for work pressures and changing family jobs, a sharp decline was seen in the experimental group (from 18.73 to 12.73 and 12.53), while the control group remained stable.

A consistent downward trend was also evident in illness and nursing pressures within the family (from 11.53 to 8.66 and 8.73) and loss-related pressures (from 11.26 to 6.46 and 6.26) among the experimental group. Furthermore, stress related to increasing or decreasing family members and family legal problems showed meaningful improvements, with average scores decreasing from 7.93 to 5.20 and 7.73 to 4.86, respectively, both maintained during the follow-up stage.

Overall, Table 5 demonstrates that the participants in the experimental group who received coping therapy exhibited significant reductions in perceived stress across all measured domains, with these effects persisting in the follow-up phase. In contrast, no meaningful change was observed in the control group, indicating that coping therapy effectively lowered perceived stress and promoted long-term resilience among women with cardiovascular disease.

Mean perceived stress scores significantly decreased from pre-test to post-test and remained low in the follow-up phase for the experimental group, whereas no significant changes were observed in the control group. This indicates the lasting effectiveness of coping therapy in reducing perceived stress levels.

Table 6. Results of Box's M Test for Examining the Homogeneity of Covariance Matrices in Perceived Stress

Variable	Box's M Statistic	F Value	df ₁	df ₂	Significance Level (P)
Family pressures	8.181	4.147	6	5680.302	0.125
Marital pressures	16.611	2.444	6	5680.302	0.063
Pressures due to pregnancy and children	12.977	12.210	6	5680.302	0.079
Financial and business pressures	10.373	10.998	6	5680.302	0.106
Work pressures and changing family jobs	11.771	8.354	6	5680.302	0.084
Illness and "nursing" pressure in the family	11.155	4.584	6	5680.302	0.082
Loss-related stress	13.911	2.783	6	5680.302	0.071
Increasing and decreasing family members	11.560	4.644	6	5680.302	0.080
Family legal problems	12.532	6.700	6	5680.302	0.069

According to the results of Box's M test ($P > 0.05$), the assumption of homogeneity of covariance matrices was satisfied for all variables related to perceived stress.

Table 7. Results of Mauchly's Test of Sphericity for Perceived Stress

Variable	Mauchly's W	Chi-Square (χ^2)	df	Sig. (P)	Greenhouse-Geisser	Huynh-Feldt	Lower-Bound
Intra-family pressures	.720	8.885	2	.012	.781	.848	.500
Marital pressures	.947	1.470	2	.479	.950	1.000	.500
Pressures caused by pregnancy and children	.501	18.646	2	.001	.667	.713	.500
Financial and business pressures	.106	60.584	2	.001	.528	.551	.500
Work pressures and changing family jobs	.104	60.998	2	.001	.528	.550	.500

Illness and caregiving pressures in the family	.223	40.546	2	.001	.563	.591	.500
Loss-related pressures	.105	60.895	2	.001	.528	.550	.500
Increasing and decreasing family members	.755	7.596	2	.022	.803	.875	.500
Family legal problems	.192	44.600	2	.001	.553	.580	.500

According to the results of Mauchly's test ($P < 0.01$), the assumption of sphericity was violated for intra-family pressures, pressures caused by pregnancy and children, financial and business pressures, work pressures, changing family jobs, illness and caregiving pressures, loss-related pressures, changes in family size, and family legal problems.

Therefore, for interpreting the repeated-measures ANOVA results of these variables, the Huynh-Feldt correction was applied to adjust the degrees of freedom.

For marital pressures, the sphericity assumption was met ($P > 0.05$); thus, the standard (unadjusted) F-statistics were used in the interpretation of results.

Table 8. Results of repeated-measures ANOVA for within- and between-group effects on perceived stress

Effects	Variable	Source	Sum of Squares	df	Mean Square	F Value	Sig. (P)	Eta Squared (η^2)	Statistical Power
Within Subjects	Family pressures	Time	527.089	1.697	310.636	40.759	.001	.593	1.000
		Interaction effect	436.156	1.697	257.045	33.728	.001	.546	1.000
		Error	362.089	47.511	7.621	—	—	—	—
	Marital pressures	Time	125.600	1.899	66.128	97.209	.001	.776	1.000
		Interaction effect	142.222	1.899	74.880	110.074	.001	.797	1.000
		Error	36.178	53.182	.680	—	—	—	—
	Pressures due to pregnancy and children	Time	27.267	1.426	19.116	9.428	.001	.252	.925
		Interaction effect	38.422	1.426	26.937	13.285	.001	.322	.982
		Error	80.978	39.938	2.028	—	—	—	—
	Financial and business pressures	Time	312.467	1.102	283.664	13.325	.001	.322	.955
		Interaction effect	217.622	1.102	197.562	9.281	.004	.249	.862
		Error	656.578	30.843	21.288	—	—	—	—
	Work pressures and changing family jobs	Time	194.289	1.100	176.546	17.688	.001	.387	.988
		Interaction effect	178.822	1.100	162.492	16.280	.001	.368	.981

Effects	Variable	Source	Sum of Squares	df	Mean Square	F Value	Sig. (P)	Eta Squared (η^2)	Statistical Power
Between Subjects	Illness and “nursing” pressure in the family	Error	307.556	30.814	9.981	—	—	—	—
		Time	30.022	1.182	25.404	8.444	.005	.232	.847
		Interaction effect	52.422	1.182	44.359	14.744	.001	.345	.977
	Loss-related pressures	Error	99.556	33.090	3.009	—	—	—	—
		Time	110.467	1.101	100.355	20.566	.001	.423	.995
		Interaction effect	130.467	1.101	118.525	24.289	.001	.465	.999
	Increasing and decreasing family members	Error	150.400	30.821	4.880	—	—	—	—
		Time	29.356	1.750	16.777	16.280	.001	.368	.998
		Interaction effect	40.156	1.750	22.949	22.269	.001	.443	1.000
	Family legal problems	Error	50.489	48.994	1.031	—	—	—	—
		Time	65.067	1.159	56.122	14.243	.001	.337	.971
		Interaction effect	23.022	1.159	19.857	5.040	.027	.153	.626
	Family pressures	Error	127.911	32.463	3.940	—	—	—	—
		Group	1217.344	1	1217.344	88.662	.000	.760	1.000
		Error	384.444	28	13.730	—	—	—	—
	Marital pressures	Group	253.344	1	253.344	257.431	.001	.902	1.000
		Error	27.556	28	.984	—	—	—	—
	Pressures due to pregnancy and children	Group	34.844	1	34.844	4.091	.043	.127	.497
		Error	238.489	28	8.517	—	—	—	—
	Financial and business pressures	Group	499.378	1	499.378	12.379	.002	.307	.924
		Error	1129.556	28	40.341	—	—	—	—
	Work pressures and changing family jobs	Group	344.178	1	344.178	6.432	.017	.187	.687
		Error	1498.311	28	53.511	—	—	—	—

Effects	Variable	Source	Sum of Squares	df	Mean Square	F Value	Sig. (P)	Eta Squared (η^2)	Statistical Power
	Illness and “nursing” pressure in the family	Group	59.211	1	59.211	5.295	.029	.159	.603
		Error	313.111	28	11.183	—	—	—	—
	Loss-related pressures	Group	250.000	1	250.000	26.448	.001	.486	.999
		Error	264.667	28	9.452	—	—	—	—
	Increasing and decreasing family members	Group	41.344	1	41.344	6.148	.019	.180	.668
		Error	188.311	28	6.725	—	—	—	—
	Family legal problems	Group	59.211	1	59.211	9.330	.005	.250	.839
		Error	177.689	28	6.346	—	—	—	—

Based on the results of the repeated-measures analysis of variance presented in Table 8, the effect of time on the perceived stress variable was found to be statistically significant at the level of $P < 0.01$. This indicates that the participants’ perceived stress scores changed significantly across the three measurement phases — pre-test, post-test, and follow-up — within both the experimental and control groups. Moreover, a significant group $\times$ time interaction effect ($P < 0.01$) was observed, suggesting that the trend of change in perceived stress over time differed meaningfully between the experimental group (which received coping therapy) and the control group.

Specifically, the experimental group demonstrated a notable reduction in perceived stress from the pre-test to post-test, and this improvement was maintained during the follow-up phase, whereas the control group showed little or no change across time points. The large Eta squared (η^2) values reported for most stress domains (ranging from 0.23 to 0.90) indicate that the coping therapy had a strong and substantial impact on reducing perceived stress levels.

Examining the subscales reveals that the greatest reductions were related to marital pressures ($\eta^2 = 0.90$), followed by family pressures ($\eta^2 = 0.76$) and loss-related stress ($\eta^2 = 0.48$), all showing highly significant time and interaction effects ($P < 0.001$). In contrast, stressors such as pressures caused by pregnancy, children and family legal problems exhibited moderate yet still statistically significant changes ($\eta^2 = 0.12$ – 0.25 , $P < 0.05$).

In summary, the findings indicate that coping therapy significantly improved participants’ ability to manage and reduce different dimensions of perceived stress. The consistent pattern of decline across multiple stress categories — particularly in family, marital, and loss-related domains — highlights the therapy’s comprehensive effectiveness in alleviating perceived stress among women with cardiovascular diseases.

Repeated-measures ANOVA results show a significant main effect of time and a significant group $\times$ time

interaction on perceived stress ($P < 0.01$), confirming that coping therapy effectively reduced stress levels across different domains compared with the control group.

In Table 5, the results of the repeated-measures ANOVA reveal that coping therapy produced significant effects on perceived stress across multiple life domains. The effect sizes (η^2) for the time factor were generally large, ranging from 0.23 to 0.77, indicating substantial reductions in perceived stress over time within the experimental group. In particular, the largest effects were observed for marital pressures ($\eta^2 = 0.77$) and family pressures ($\eta^2 = 0.59$), suggesting that the intervention markedly alleviated stress associated with interpersonal and domestic factors. Similarly, strong interaction effects between group and time were found for marital pressures ($\eta^2 = 0.79$), family pressures ($\eta^2 = 0.54$), and loss-related stress ($\eta^2 = 0.46$), confirming that changes across measurement stages differed meaningfully between the experimental and control groups. The between-group comparisons also demonstrated very large effect sizes—for example, $\eta^2 = 0.90$ for marital pressures and $\eta^2 = 0.76$ for family pressures—showing that coping therapy accounted for a major proportion of the variance in perceived stress outcomes. Moderate effects ($\eta^2 \approx 0.25\text{--}0.36$) were observed for financial, work-related, and family-legal pressures, indicating meaningful yet comparatively smaller improvements. Overall, the results emphasize that coping therapy was highly effective in reducing perceived stress, particularly in domains related to family, marriage, and emotional loss, and that these effects were both statistically significant and practically substantial across time and between groups.

Discussion

This study aimed to investigate the effect of coping therapy on stress coping strategies and perceived stress levels in women with cardiovascular disease. The results demonstrated significant differences in both stress coping strategies and perceived stress levels between the pre-test, post-test, and follow-up stages across the two groups. This finding suggests that the accumulation of daily life stress can seriously endanger the physical health of individuals, particularly those with cardiovascular vulnerabilities.

Since in cases of stress, confrontational coping, avoidance, and seeking social support act in an integrated manner, stress can lead to positive reappraisal and influence self-control through changes in responsibility. Coping, as one of the fundamental constructs of health psychology, plays a central role in shaping individuals' behavioral and cognitive responses to stressors. Improving coping methods and patients' perspectives toward problems enhances their psychological resilience. These findings are consistent with those of Bahaoddini et al. (2021), who showed that coping therapy effectively improved women's stress management in interpersonal relationships. Similarly, Aghayousefi & Alagheband (2013) reported that coping therapy significantly increased the use of adaptive coping strategies such as seeking social support, planned problem solving, and positive reappraisal while reducing avoidance-oriented strategies in the experimental group. These results align with those of Khoshabi et al. (2010) and Motiei et al. (2012), confirming that coping therapy decreases avoidance strategies and enhances self-control, social support seeking, and positive appraisal methods.

Coping therapy can thus be regarded as an effective psychological intervention for improving patients' responses to stress, promoting emotional regulation, and preventing the physiological consequences of

chronic stress. The findings underscore that stress itself is not necessarily harmful, but the way individuals perceive and respond to stress determines its health impact. Stress coping styles represent the behavioral and cognitive efforts individuals make to adapt to their environment. Therefore, adopting healthy, adaptive strategies to manage psychological stressors plays a crucial role in improving mental and physical health, reducing illness risk, and enhancing overall social well-being.

The results of the present study also revealed that participants reported financial pressures, family illness, and occupational stress as the most common stressors. Cardiac patients experienced significantly higher levels of stress than the control group, both in frequency and intensity. Previous studies have shown that economic hardship and chronic financial stress are among the major causes of heart disease. Pasandideh et al. (2019) identified significant differences in perceived stress, cognitive flexibility, and perceived controllability between patient and control groups, emphasizing the psychological aspects of chronic illness. Tracy et al. (2022) demonstrated that coping strategies moderate the relationship between perceived stress and both physical and overall health, indicating the necessity of prevention and intervention strategies in stress management.

Aghajani et al. (2017) found that compassion-based therapy effectively reduced perceived stress among coronary artery disease patients, and Aminian et al. (2014) demonstrated that stress-coping training significantly improved the quality of life of cardiac and stroke patients. These results collectively suggest that improving living conditions and access to medical and psychological care are essential for promoting cardiovascular health and reducing mortality. Moreover, Huang et al. (2020) found that coping strategies effectively reduced anxiety among nurses during the COVID-19 pandemic. Siwik et al. (2020) and Lee, Tsang, and Chiang (2019) concluded that problem-focused coping and reduced avoidant strategies are strongly associated with psychological well-being and safety attitudes among healthcare workers.

Overall, the evidence indicates that individuals facing chronic stressors benefit most from adaptive, problem-oriented coping mechanisms. Given that health-related and occupational stressors are difficult to manage due to limited coping responses, many individuals remain vulnerable to stress-induced illnesses. Therefore, promoting health, psychological resilience, and stress management education should be prioritized in society. Creating more supportive, humane, and mindful work environments can simultaneously enhance productivity and health outcomes.

From a physiological perspective, unmanaged stress activates alpha-adrenergic receptors, increasing heart rate and myocardial oxygen demand, which may lead to coronary vasoconstriction and a higher risk of myocardial infarction. Psychological stress can impair coronary microcirculation through endothelium-dependent mechanisms, further heightening vulnerability to cardiovascular events. Stress also indirectly contributes to unhealthy behaviors such as smoking and directly triggers neuroendocrine activation within the autonomic nervous system. When coping styles are maladaptive, stress remains unresolved and may become chronic, exacerbating depression, helplessness, and physical decline. In contrast, adaptive coping acts as a protective buffer against stress, promoting recovery and emotional balance.

These findings support the growing recognition that integrating coping therapy with standard biomedical treatment constitutes an essential component of comprehensive cardiac rehabilitation. By addressing both psychological and physiological dimensions of stress, such integrative approaches can significantly enhance resilience, improve recovery outcomes, and reduce the long-term burden of cardiovascular disease.

Conclusion

The findings of the present study demonstrated that coping therapy effectively reduced perceived stress levels among women with cardiovascular diseases. By examining the root causes of their problems, becoming familiar with the concept of stress, and learning how to manage it through appropriate coping strategies, participants were able to enhance their self-awareness and psychological resilience. Women with heart disease who learned to accurately identify and evaluate stressful situations succeeded in breaking the cycle of ineffective coping behaviors. Through the consistent use of adaptive coping strategies, they became more capable of managing stress effectively and developed a practical, multi-faceted coping “toolbox” that can be applied to future stressors.

Furthermore, the results highlighted the significant role of group-based coping therapy in improving the overall functioning and psychological well-being of cardiovascular patients. Therefore, it is recommended that such interventions be implemented more broadly to enhance the quality of life and mental health of this population. For individuals requiring more personalized attention, individual therapy sessions may be offered prior to or alongside group therapy to maximize therapeutic outcomes.

Despite these promising results, certain limitations should be acknowledged. Factors such as participants' attitudes toward the assessment tools, the level of cooperation and honesty during data collection, and the degree of commitment to fully applying the learned techniques may have influenced the results. Additionally, while the study incorporated rigorous methodological controls, the absence of statistical covariate adjustments represents a potential limitation. Future research is encouraged to apply more advanced statistical models—such as ANCOVA or multiple regression analyses—to better control for demographic, clinical, and lifestyle-related confounding variables.

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