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Comparison of the Effectiveness of Short-Term Psychodynamic Therapy and Cognitive Behavioral Therapy on Blood Pressure in Patients with Coronary Artery Disease in Hamedan City

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A B S T R A C T

Purpose: The objective of this study was to compare the effectiveness of short-term psychodynamic therapy and cognitive behavioral therapy in reducing blood pressure among patients with coronary artery disease in Hamedan.

Methods and Materials: This applied research employed a quasi-experimental design using a pretest-posttest model with two experimental groups and one control group. The study population included patients aged 35–55 with confirmed coronary artery disease, referred to Farshchian Hospital in 2024. Forty-five eligible participants were selected through convenience sampling and randomly assigned to either the short-term psychodynamic therapy group, the cognitive behavioral therapy group, or the control group. The interventions lasted for 90 days and were delivered in 12 structured group sessions. Blood pressure was measured before and after the intervention using a calibrated digital sphygmomanometer. Data were analyzed using univariate analysis of covariance (ANCOVA) and Bonferroni post hoc tests in SPSS version 25.

Findings: ANCOVA results revealed a significant effect of group membership on post-test blood pressure scores after controlling for pre-test values ($F = 24.040$, $p = 0.001$, $\eta^2 = 0.478$), indicating that the type of intervention had a substantial impact. Bonferroni post hoc analysis showed that both intervention groups experienced significant reductions in blood pressure compared to the control group (psychodynamic therapy vs. control: Mean Difference = -1.245, $p = 0.001$; cognitive behavioral therapy vs. control: Mean Difference = -2.004, $p = 0.001$). Moreover, the cognitive behavioral therapy group demonstrated a significantly greater reduction compared to the psychodynamic therapy group (Mean Difference = -0.759, $p = 0.014$).

Conclusion: Both short-term psychodynamic therapy and cognitive behavioral therapy were effective in reducing blood pressure in patients with coronary artery

disease, with cognitive behavioral therapy showing superior results. These findings support the integration of psychological therapies into cardiovascular disease management.

Keywords: *Cognitive Behavioral Therapy, Psychodynamic Therapy, Blood Pressure, Coronary Artery Disease*

1. Introduction

Cardiovascular diseases, especially coronary artery disease (CAD), remain a leading cause of mortality and morbidity worldwide. Among the wide range of clinical symptoms and physiological consequences of CAD, elevated blood pressure is a well-established and modifiable risk factor that critically influences the prognosis and quality of life in affected individuals. The chronic nature of hypertension in these patients not only demands pharmacological intervention but also calls for the integration of psychotherapeutic strategies targeting behavioral and emotional regulation. In recent years, psychotherapeutic methods such as cognitive-behavioral therapy (CBT) and short-term psychodynamic therapy (STPT) have received growing attention for their potential to complement standard medical treatment and regulate physiological indicators such as blood pressure by addressing underlying psychological and behavioral processes (Barber & Summers, 2015; Craighead et al., 2012).

Cognitive-behavioral therapy has become one of the most widely applied evidence-based approaches in clinical settings for various psychological and somatic conditions, including hypertension. It is built on the premise that cognitive distortions and maladaptive behaviors contribute significantly to emotional distress and health outcomes. CBT aims to modify these maladaptive patterns through structured interventions involving cognitive restructuring, behavioral activation, and skills training (Huguenel et al., 2025). The effectiveness of CBT in improving health behaviors and physiological indicators among patients with chronic illnesses is well documented. For example, Lujuan and Yi (2024) demonstrated that internet-based CBT improved nutritional status and quality of life in hemodialysis patients, suggesting that CBT can be effective in managing complex physiological conditions via behavioral pathways (Lujuan & Yi, 2024). Similarly, CBT has shown promise in elderly populations, improving sleep quality (Ibrahim et al., 2022) and reducing sedentary behaviors while enhancing cognitive function (Jeong et al., 2019).

Moreover, studies focusing on metabolic syndrome and hypertension confirm the beneficial role of CBT in clinical management. Ebrahimidorcheh et al. (2021) found that cognitive-behavioral interventions significantly improved self-care behaviors and facilitated better blood pressure control in patients with primary hypertension (Ebrahimidorcheh et al., 2021). Complementary findings from Noghabi et al. (2022) reveal that CBT-based self-management training positively influenced key components of metabolic syndrome, emphasizing its role in behavioral regulation related to cardiovascular risk (Noghabi et al., 2022). From a behavioral perspective, the structured and goal-oriented nature of CBT is instrumental in instilling healthier lifestyle habits, fostering adherence to medication, and reducing stress—all of which are important for managing blood pressure.

In the context of cardiovascular health, STPT has also emerged as a valuable modality, particularly in individuals whose hypertension is influenced or exacerbated by unresolved emotional conflicts, internal stressors, and poor affect regulation. Grounded in classical psychodynamic theory, STPT focuses on identifying and resolving unconscious conflicts and relational patterns through a time-limited therapeutic process (Barber & Summers, 2015). It is especially effective in helping individuals increase their insight into emotional triggers and maladaptive interpersonal dynamics that perpetuate distress and somatic symptoms (Friederich et al., 2017). In contrast to CBT's surface-level focus on cognition and behavior, STPT dives into the deeper emotional and relational roots of symptoms, which may be particularly relevant in chronic conditions like CAD where psychophysiological feedback loops are at play. Evidence from Friederich et al. (2017) supports STPT's application in psychosomatic and behavioral medicine by demonstrating its efficacy in reducing stress-induced physiological arousal, thereby indirectly contributing to cardiovascular health outcomes.

The link between arterial health, psychological function, and behavior is complex and bidirectional. Gonçalves et al. (2024) highlight how early markers of arterial dysfunction in childhood are associated with cognitive and behavioral outcomes at school age, underscoring the lifelong interplay

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between vascular and psychological health (Gonçalves et al., 2024). This view is supported by Efimova et al. (2015), who reported that effective antihypertensive treatment not only improved cerebral perfusion but also enhanced cognitive function in patients with metabolic syndrome, further suggesting that blood pressure regulation is intricately tied to psychological well-being (Efimova et al., 2015). These findings validate the hypothesis that integrative interventions targeting both physiological and psychological processes can yield synergistic outcomes in patients with chronic cardiovascular conditions.

In line with this biopsychosocial model, recent interdisciplinary studies have begun to investigate how different psychological therapies affect blood pressure outcomes in clinical populations. For instance, Mardiana et al. (2023) provided empirical support for the use of CBT in reducing anxiety levels among diabetic patients—a population that shares multiple cardiovascular risk factors with CAD patients—by altering maladaptive beliefs and behaviors (Mardiana et al., 2023). Likewise, Rangkoratat et al. (2024) applied social cognitive theory in health coaching for tuberculosis patients and found that behavioral changes and increased self-efficacy led to improved preventive behaviors, demonstrating the applicability of cognitive frameworks across various chronic diseases (Rangkoratat et al., 2024). The value of such cognitive frameworks lies in their adaptability to diverse populations and their consistent impact on health-promoting behavior.

In the Middle East context, Radaideh et al. (2011) analyzed the relationship between eprosartan-based hypertension treatment and cognitive function in a large cohort, highlighting the importance of controlling systolic arterial pressure not only for physical health but also for preserving cognitive integrity (Radaideh et al., 2011). Similarly, Zakharchenko and Petrikov (2018) examined the utility of CBT in treating anxiety and depression following stroke, with findings supporting the therapeutic crossover between mental and physical health domains (Zakharchenko & Петриков, 2018). These studies provide a compelling rationale for implementing psychotherapy, including CBT and STPT, as complementary approaches in the management of cardiovascular diseases such as CAD.

Despite the mounting evidence, few empirical studies have compared the relative effectiveness of STPT and CBT specifically on blood pressure outcomes in CAD patients. This gap is significant considering the differentiated mechanisms by which these therapies operate—STPT through emotional insight and relational dynamics, and CBT through behavioral activation and cognitive restructuring. Understanding the relative and combined efficacy of these approaches can offer critical insight into personalized interventions for CAD patients struggling with hypertension. It is especially important given that stress, emotional dysregulation, and unhealthy behavior patterns are known contributors to poor blood pressure control, and thus should be addressed within an integrated psychological care model.

The present study was therefore designed to compare the effectiveness of short-term psychodynamic therapy and cognitive-behavioral therapy on blood pressure in patients with coronary artery disease in the city of Hamedan.

2. Methods and Materials

2.1. Study Design and Participants

This study employed an applied research design with a semi-experimental method, specifically utilizing a pretest-posttest format with experimental and control groups. The statistical population consisted of all patients diagnosed with coronary artery disease, aged between 35 and 55 years, who were referred to Farshchian Hospital in Hamedan during the year 2024. Sampling was conducted using a convenience method. Researchers approached Farshchian Hospital, identified eligible coronary artery disease patients, and distributed volunteer participation forms. Based on inclusion and exclusion criteria, 45 individuals were selected and randomly assigned to two experimental groups and one control group. This sample size aligns with the minimum requirement of 15 individuals per group for experimental studies. Inclusion criteria included a diagnosis of coronary artery disease according to World Health Organization standards by a cardiologist, minimum educational attainment of middle school, age between 35 and 55 years, the ability to participate in group therapy sessions, and a willingness to cooperate. Exclusion criteria involved missing more than two intervention sessions, unwillingness to continue participation, failure to complete assigned exercises, and unforeseen events disrupting the intervention process. Ethical considerations were strictly observed: all participants received information about the study and were assured they could withdraw at any stage. They were guaranteed confidentiality and informed that the collected data would be used solely for research purposes. To preserve privacy, no identifying information was recorded. All participants provided written informed consent at the end of the recruitment process.

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2.2. *Measures*

Data collection was conducted using a demographic and clinical checklist alongside repeated systolic and diastolic blood pressure measurements. Blood pressure was assessed using a calibrated digital sphygmomanometer, validated according to standard clinical protocols. Each participant's blood pressure was measured under standardized conditions: after five minutes of rest in a sitting position, with the cuff positioned at heart level and measurements taken on the same arm throughout the study to ensure consistency. Blood pressure readings were recorded both prior to the intervention (pre-test) and following the completion of the therapy sessions (post-test). Additionally, a clinical diagnosis of coronary artery disease was confirmed and documented by a certified cardiologist based on WHO criteria. Background information such as age, gender, level of education, medication use, and history of cardiovascular events was also recorded to control for confounding variables. No psychological questionnaires were used to assess therapy outcomes, as the main outcome variable in this study was objectively measured systolic and diastolic blood pressure. Throughout the sessions, attendance sheets and session engagement logs were maintained to monitor participants' compliance with the therapeutic process. These records were used to ensure that participants met the minimum threshold of participation, which was defined as attending at least 80% of the therapy sessions.

2.3. *Interventions*

The protocol used for the short-term psychodynamic group psychotherapy intervention was adapted from the therapeutic framework developed by Rutan, Shay, and colleagues (2014), without any modifications by the researcher. This structured intervention included 12 group sessions, each lasting 2 hours, conducted twice a week over a 90-day period. The sessions followed a consistent format, beginning with the first session focused on introducing the therapeutic goals and rules, establishing the duration of the therapy, setting group agreements, and encouraging participants to share what brought them to therapy. Sessions two through seven were devoted to core psychodynamic processes, including working with patient resistance to emotional closeness with the therapist and other group members, such as fear of intrusion into personal boundaries. These sessions emphasized identifying and clarifying patients' defense mechanisms that serve to avoid anxiety and emotional experiences, working through anxiety management strategies, and facilitating the recognition and expression of emotions within the safety of the group. Sessions eight through twelve concentrated on enhancing the participants' insight into their intrapsychic problems, which is a principal goal of psychodynamic group therapy. These final sessions were dedicated to reviewing progress, consolidating learning, and preparing for termination of therapy. The intervention concluded with a post-test assessment administered to all participants.

The cognitive behavioral intervention followed the CHD-CBGI program, a structured 12-session group therapy model tailored for coronary heart disease (CHD) patients. Each session lasted 90 minutes and was conducted twice a week over the course of 90 days. The structure of each session adhered to cognitive-behavioral therapy principles and included several key components: a 10-minute review of homework assignments from the previous session, a 5-minute recap of the prior session's content, a 30-minute presentation and practice of the first topic, a 5-minute break with refreshments, another 30-minute segment to introduce and practice a second topic, followed by a 5-minute summary and wrap-up, and ending with a 5-minute assignment of the next session's homework. The content of the sessions was systematically designed to address the psychological and behavioral aspects of managing CHD. The first session introduced the group members and provided an overview of the program and CHD in general, with input from a cardiologist. The second session focused on risk factors associated with CHD and strategies for prevention and control. The third session addressed the importance of diet and physical activity, guided by an exercise and nutrition specialist. In the fourth session, participants explored the psychological impact of CHD and identified symptoms and their effects on daily life. Sessions five and six introduced and practiced coping strategies specific to CHD symptom management. The seventh session examined Type A behavior patterns (TABP) and their role in CHD development. The eighth session taught cognitive techniques for managing TABP, including the A-B-C model and strategies for reducing anger and negative thinking. Session nine reinforced the recognition of CHD symptoms and their personal impact, while the tenth session introduced cognitive approaches for symptom reduction, including physical exercise and progressive muscle relaxation. The eleventh session focused on behavioral strategies such as building social support and integrating spirituality and religiosity to alleviate CHD symptoms. The twelfth and final session included a comprehensive review of the entire

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program, collected feedback from participants, scheduled follow-up sessions, and conducted a formal closing ceremony.

2.4. Data Analysis

Data analysis was performed using SPSS version 25. To evaluate the effectiveness of the interventions, univariate analysis of covariance (ANCOVA) was used to control for the pretest scores and assess differences in post-test blood pressure levels between the groups. Additionally, Bonferroni post hoc tests were conducted to determine the pairwise significance of differences between the two experimental groups (Short-Term Psychodynamic Therapy and Cognitive Behavioral Therapy) and the control group. The statistical significance level was set at $p < 0.05$. All assumptions of ANCOVA, including normality, homogeneity of variances, and linearity between covariate and dependent variable, were tested prior to final analysis.

3. Findings and Results

Table 1 presents the descriptive statistics for blood pressure levels across the three groups (psychodynamic therapy, cognitive behavioral therapy, and control) in both the pre-test and post-test stages. At baseline, the mean systolic-diastolic blood pressure scores were relatively similar across all groups: 13.26 (SD = 0.46) for the psychodynamic group, 13.32 (SD = 0.51) for the cognitive behavioral group, and 13.42 (SD = 0.53) for the control group. These values indicate that the groups were initially comparable. Following the intervention, noticeable reductions in blood pressure were observed in both treatment groups. The psychodynamic therapy group showed a post-test mean of 12.12 (SD = 0.77), while the cognitive behavioral therapy group exhibited a further reduction to a mean of 11.37 (SD = 0.71). In contrast, the control group's post-test mean remained almost unchanged at 13.40 (SD = 0.58). These preliminary results suggest that both psychodynamic and cognitive behavioral interventions were effective in lowering blood pressure, with the cognitive behavioral approach demonstrating a slightly greater effect.

Table 1

Descriptive Statistics of Blood Pressure Scores in Pre-test and Post-test Stages for Each Group

Variable	Stage	Group	Mean	Standard Deviation
Blood Pressure	Pre-test	Psychodynamic	13.26	0.46
		Cognitive Behavioral	13.32	0.51
		Control	13.42	0.53
	Post-test	Psychodynamic	12.12	0.77
		Cognitive Behavioral	11.37	0.71
		Control	13.40	0.58

Before conducting the ANCOVA, all necessary statistical assumptions were carefully examined and confirmed. The assumption of normality was assessed using the Shapiro-Wilk test and visual inspection of Q-Q plots, which indicated that the distribution of residuals did not significantly deviate from normality. Homogeneity of variances across the groups was evaluated using Levene's test, which showed no significant difference in error variances, thus supporting the assumption of homoscedasticity. Additionally, the assumption of homogeneity of regression slopes was tested by examining the interaction between the covariate (pre-test blood pressure) and group variable, and no significant interaction was found. Linearity between the covariate and dependent variable was also confirmed through scatterplots. Therefore, all assumptions for conducting ANCOVA were met, validating the reliability of the inferential results.

Table 2

ANCOVA Results for the Effect of Group on Post-test Blood Pressure Controlling for Pre-test Scores

Variable	Source	SS	Df	MS	F	Sig.	Eta Squared
Blood Pressure	Pre-test	0.758	1	0.758	1.648	0.210	0.058
	Group	11.063	1	11.063	24.040	0.001	0.478
	Error	12.426	27	0.460			
	Total	4910.000	30				

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Table 2 shows the results of the univariate analysis of covariance (ANCOVA) conducted to examine the effect of therapeutic group on post-test blood pressure levels while controlling for pre-test scores. The covariate, pre-test blood pressure, was not a statistically significant predictor of post-test scores ($F = 1.648$, $p = 0.210$, $\eta^2 = 0.058$), indicating that pre-test levels did not significantly influence the outcome. However, the main effect of group membership was statistically significant ($F = 24.040$, $p = 0.001$, $\eta^2 = 0.478$), suggesting that the type of intervention had a strong and meaningful impact on post-intervention blood pressure. The effect size ($\eta^2 = 0.478$) indicates that nearly 48% of the variance in post-test blood pressure scores was attributable to the treatment group, reflecting a substantial treatment effect.

Table 3

Bonferroni Post-hoc Test for Pairwise Group Comparisons on Blood Pressure

Comparison	Mean Difference	Significance
Short-Term Psychodynamic vs Control	-1.245	0.001
Cognitive Behavioral vs Control	-2.004	0.001
Cognitive Behavioral vs Psychodynamic	-0.759	0.014

To further clarify the nature of the differences between groups, a Bonferroni post hoc test was conducted, and the results are presented in Table 3. The comparison between the short-term psychodynamic therapy group and the control group revealed a statistically significant difference in blood pressure levels (Mean Difference = -1.245, $p = 0.001$), indicating that psychodynamic therapy led to significant reductions in blood pressure. Similarly, the cognitive behavioral therapy group showed a statistically significant reduction compared to the control group (Mean Difference = -2.004, $p = 0.001$), with an even greater magnitude of change. Furthermore, a significant difference was also found between the two experimental groups (Mean Difference = -0.759, $p = 0.014$), suggesting that cognitive behavioral therapy was more effective than psychodynamic therapy in lowering blood pressure among coronary artery disease patients. These results reinforce the conclusion that both interventions were beneficial, with cognitive behavioral therapy yielding the most substantial improvements.

4. Discussion and Conclusion

The present study aimed to compare the effects of short-term psychodynamic therapy (STPT) and cognitive-behavioral therapy (CBT) on blood pressure levels in patients diagnosed with coronary artery disease (CAD) in Hamedan. The findings revealed that both therapeutic interventions significantly reduced blood pressure in the intervention groups compared to the control group, with the CBT group showing the most pronounced decrease. The results of the analysis of covariance indicated that group membership had a significant effect on post-test blood pressure levels, independent of pre-test values. Furthermore, the Bonferroni post hoc tests confirmed that the reductions in blood pressure were statistically significant for both experimental groups in comparison to the control group, and that CBT was more effective than STPT. These results offer robust support for the inclusion of psychological interventions, particularly CBT, in the clinical management of hypertension among patients with CAD.

The significant reduction in blood pressure observed in the CBT group aligns with a well-established body of literature that recognizes CBT as an effective intervention for improving both psychological and physiological outcomes in patients with chronic health conditions. In particular, cognitive-behavioral therapy facilitates the restructuring of maladaptive thought patterns and encourages health-promoting behaviors, which collectively contribute to reduced physiological arousal and better cardiovascular regulation (Craighead et al., 2012; Huguenel et al., 2025). These mechanisms are particularly relevant for CAD patients, where heightened stress reactivity and poor behavioral self-regulation are known to exacerbate disease progression. For example, Ebrahimidorcheh et al. (2021) demonstrated that CBT significantly improved self-care behaviors and blood pressure control in patients with primary hypertension, underscoring the potential of CBT-based programs to modify lifestyle and improve adherence to treatment regimens (Ebrahimidorcheh et al., 2021). Similarly, Noghabi et al. (2022) found that CBT-oriented self-management training yielded positive changes in metabolic syndrome components, suggesting that the psychological restructuring inherent in CBT plays a critical role in cardiovascular risk reduction (Noghabi et al., 2022).

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The findings of this study also showed that STPT led to a statistically significant reduction in blood pressure compared to the control group, although to a lesser extent than CBT. This result underscores the therapeutic value of short-term psychodynamic approaches in addressing the emotional and intrapsychic contributors to physiological dysregulation in cardiac patients. STPT works by helping individuals gain insight into unconscious conflicts and maladaptive emotional responses, thus reducing chronic stress and its physiological sequelae (Barber & Summers, 2015). As Friederich et al. (2017) emphasized, short-term psychodynamic therapy is particularly effective in treating somatic symptoms that are rooted in emotional dysregulation and relational conflict, both of which are prevalent in patients dealing with chronic conditions like CAD (Friederich et al., 2017). By encouraging the expression and resolution of repressed emotional experiences, STPT may reduce sympathetic nervous system activation and improve autonomic balance, thereby positively influencing blood pressure.

Further support for the physiological effects of psychological interventions can be found in the broader literature on cardiovascular health. Efimova et al. (2015) reported that antihypertensive therapy improved cerebral perfusion and cognitive function, highlighting the interplay between blood pressure regulation and psychological states (Efimova et al., 2015). Additionally, Gonçalves et al. (2024) revealed that arterial health markers in children were associated with later cognitive and behavioral outcomes, suggesting a bidirectional relationship between vascular and psychological functioning across the lifespan (Gonçalves et al., 2024). These findings reinforce the notion that psychological health is inseparable from physical health and support the present study's approach in integrating psychotherapeutic modalities into cardiac care.

The superior performance of CBT in this study can be attributed to its structured, skills-based nature, which provides patients with practical tools for managing stress, modifying unhealthy behaviors, and enhancing emotional regulation. The inclusion of behavioral components such as relaxation training, problem-solving skills, and cognitive reframing likely contributed to the physiological improvements observed in the CBT group. These mechanisms are echoed in related studies that reported improvements in behavioral health and emotional well-being following CBT interventions in populations with chronic illness (Ibrahim et al., 2022; Mardiana et al., 2023). For instance, Lujuan and Yi (2024) found that an internet-based CBT intervention significantly enhanced the nutritional status and quality of life in hemodialysis patients, suggesting that CBT's benefits are not confined to psychological outcomes but extend to clinical biomarkers as well (Lujuan & Yi, 2024).

The relational focus of STPT, although less directive than CBT, also offers unique benefits, particularly for patients whose hypertensive symptoms may be rooted in unresolved interpersonal or emotional issues. As Barber and Summers (2015) noted, STPT aims to help patients develop insight into their recurring emotional conflicts and maladaptive interpersonal patterns, which can lead to decreased psychological distress and improved autonomic regulation (Barber & Summers, 2015). While the current study found CBT to be more effective than STPT in reducing blood pressure, it is important to recognize the distinct therapeutic targets of each modality. STPT may be particularly suitable for patients with comorbid affective disorders or complex emotional histories, whereas CBT may be more effective for those in need of behavioral change and immediate symptom relief.

Importantly, the observed reductions in blood pressure cannot be fully understood without considering the underlying biopsychosocial mechanisms. Studies such as those by Zakharchenko and Petrikov (2018) have shown that CBT is effective in treating anxiety and depression following stroke, with implications for autonomic regulation and blood pressure stabilization (Zakharchenko & Петриков, 2018). Similarly, Jeong et al. (2019) demonstrated that cognitive interventions in elderly women with mild cognitive impairment led to improvements in sedentary behavior and health-related quality of life, thereby supporting the broader application of psychological interventions in managing physiological health (Jeong et al., 2019). Moreover, Radaideh et al. (2011) found a relationship between antihypertensive treatment and improved cognitive function, highlighting the systemic effects of blood pressure regulation and the value of a comprehensive treatment model (Radaideh et al., 2011).

From a public health and clinical implementation perspective, the results of this study echo the findings of Rangkoratat et al. (2024), who emphasized the importance of enhancing self-efficacy and behavior change through cognitive frameworks in managing chronic diseases such as tuberculosis (Rangkoratat et al., 2024). This aligns well with the outcomes observed in the current research, where the CBT group demonstrated greater physiological improvement, likely due to enhanced self-regulatory

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capacity and behavioral compliance. These results point toward the necessity of adopting multidimensional treatment approaches that integrate psychological and behavioral components in routine cardiovascular care.

Limitations

Despite the promising findings, several limitations should be acknowledged. First, the sample size was relatively small, which may limit the generalizability of the results to broader populations. Although the statistical power was sufficient to detect significant differences, larger and more diverse samples would enhance the robustness of future findings. Second, the study relied on a short-term follow-up and did not assess the long-term sustainability of the observed improvements in blood pressure. The lack of follow-up measurements beyond the intervention period limits conclusions about the persistence of treatment effects. Additionally, potential confounding variables such as medication adherence, diet, and physical activity were not systematically controlled or monitored, which may have influenced the outcomes independently of the interventions.

Suggestions for Future Research

Future studies should aim to expand the sample size and include participants from multiple clinical settings to increase external validity. It would also be beneficial to incorporate long-term follow-up assessments to evaluate the durability of treatment effects and identify factors contributing to sustained blood pressure control. Comparative studies that include other therapeutic modalities, such as mindfulness-based stress reduction or acceptance and commitment therapy, could further elucidate the relative effectiveness of different psychotherapeutic approaches. Furthermore, integrating qualitative methodologies could provide deeper insight into the subjective experiences of patients undergoing psychological interventions, thereby enriching our understanding of how and why certain therapies are effective.

Suggestions for Practice

Based on the findings of this study, it is recommended that healthcare systems consider incorporating structured psychological interventions, particularly cognitive-behavioral therapy, into routine treatment plans for patients with coronary artery disease. Training multidisciplinary teams, including psychologists and cardiac rehabilitation specialists, to deliver these therapies could improve patient outcomes and reduce reliance on pharmacological interventions. Additionally, implementing group-based formats, as utilized in this study, may enhance cost-effectiveness and accessibility, particularly in resource-constrained healthcare environments. Finally, clinicians should consider individual patient characteristics, such as emotional regulation difficulties and readiness for behavioral change, when selecting between STPT and CBT to ensure tailored and effective care.

Authors' Contributions

Authors equally contributed to this article.

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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Ethical Considerations

All procedures performed in studies involving human participants were under the ethical standards of the institutional and, or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

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