

## Research Paper



# Comparing the Effectiveness of Short-term Intensive Dynamic Psychotherapy and Schema Therapy on Perceived Stress in Patients With Hypertension

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## ABSTRACT

**Background and Objective:** Today, cardiovascular diseases are among the leading causes of death in the world. Therefore, the present study aimed to compare the effectiveness of intensive short-term dynamic psychotherapy (ISTDP) and schema therapy (ST) on perceived stress in patients with hypertension at comprehensive health service centers in Sari City, Iran, in 2023.

**Materials & Methods:** The current research was a clinical trial study and, in terms of methodology, a quasi-experimental study with a pre-test-post-test design. The research population consisted of all patients suffering from hypertension, and the research sample included 45 individuals selected through purposive sampling. A total of 45 participants were divided into three groups of 15. The first group received intervention type 1 (ST), and the second group received intervention type 2 (ISTDP). As a control group, the third group did not receive any intervention. The perceived stress questionnaire (PSQ) (Cohen et al., 1983), a 9-session ST protocol, and an 11-session ISTDP protocol were used for this study. Data analysis was performed using SPSS software, version 26.

**Results:** The results of this study indicated that ISTDP and ST approaches effectively reduced perceived stress in patients with hypertension ( $P < 0.001$ ). The results showed that the Mean $\pm$ SD of the perceived stress score in the ST group after follow-up was  $34.06 \pm 5.96$ , and that of the ISTDP group after follow-up was  $30.17 \pm 5.88$ . Also, the Mean $\pm$ SD of the perceived stress score in the control group was  $38.46 \pm 7.63$ . There was a significant difference between the intervention and control groups after follow-up ( $P < 0.001$ ).

**Conclusion:** This study showed that two therapy approaches, ISTDP and ST, are effective in patients with hypertension.

**Keywords:** Dynamic psychotherapy, Hypertension, Perceived stress, Schema therapy (ST)

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## Introduction

In recent years, cardiovascular diseases have become significantly prevalent worldwide. According to [World Health Organization \(WHO\)](#), more than 17.5 million deaths worldwide annually are caused by cardiovascular diseases [1]. Hypertension is among the leading risk factors for cardiovascular diseases. Hypertension accounts for a significant proportion of deaths in low- and middle-income societies [2]. Developing societies are twice as likely to suffer from hypertension as developed societies [3]. Studies conducted in Iran indicate a 23% prevalence of hypertension in individuals aged 30 to 35 years and a 50% prevalence in those over 55 years [4]. Based on these statistics, the [WHO](#) has developed an action plan to reduce hypertension by 25% by the end of 2025 [5].

The [World Heart Federation](#) defines blood pressure as the force exerted by blood against the walls of blood vessels as it circulates [5]. According to diagnostic criteria, elevated blood pressure becomes hypertension when measurements show >140 mm Hg (systolic) or >90 mm Hg (diastolic). Various factors are involved in increasing blood pressure. Stress is one of the main factors in the development of cardiovascular diseases and hypertension [6]. In stressful or threatening situations, visceral blood vessels constrict, triggering increased heart rate and elevated blood pressure [7]. According to research, stress is one of the significant factors in the increase in global mortality due to heart disease [8]. One of the factors that affects cardiovascular diseases is perceived stress [9].

Perceived stress refers to the body's adaptive response to any demanding circumstance that requires physical, psychological, or emotional adjustment. According to studies, primary hypertension can be caused by psychological and stressful tensions [7]. In addition, hypertension and stress interact and affect people's quality of life (QoL) [10]. Although medication is available for hypertensive patients, complementary non-pharmacological interventions remain essential for improving their QoL [11].

Schema therapy (ST) is one of the new and effective psychological treatment approaches for chronic problems, including hypertension [12]. Jeffrey Young invented ST in 1990, and it is used today as a psychological treatment—an effective therapeutic model for treating psychological disorders and a therapeutic style for treating chronic diseases. It integrates principles and concepts from several approaches, including cognitive-behavioral therapy, Gestalt therapy, and psychodynam-

ic therapy. Young considers the goal of ST to increase adaptive responses to the environment to satisfy emotional needs and, as a result, improve mental health [13]. Zarei and Fooladvand investigated ST's effectiveness on cardiovascular patients' perceived stress in a study, and the results indicated a positive effect of this therapy on patients' stress levels [14]. In another study, Nikan et al. reported the effectiveness of ST on stress in patients with cardiovascular diseases [15].

Another non-pharmacological approach effective in modulating psychological variables such as stress is intensive short-term dynamic psychotherapy (ISTDP). This approach has been developed and refined through the work of individuals such as Driessen et al. [16]. This approach focuses on individuals' unconscious emotional conflicts so that they can understand and process their unconscious conflicts in the present moment without using defense mechanisms [17]. According to Freud, anxiety causes the formation of defense mechanisms in individuals, and these defense mechanisms are, in fact, ineffective strategies that lead to repression and failure to experience feelings and emotions. As a result, individuals become involved in psychological disorders, and their ability to face challenges decreases. Therefore, this approach attempts to enable individuals to experience anxiety without resistance [18]. Studies have shown the effectiveness of ISTDP in improving patients' stress and anxiety [17, 19]. In a study, Amin Roostamkhalai and Sadeghi [20] reported the effectiveness of ISTDP on self-management in patients with cardiovascular diseases.

Given the increasing incidence of hypertension in society, this study aimed to compare the effectiveness of ISTDP and ST on perceived stress in patients suffering from hypertension.

## Materials and Methods

The present study was quasi-experimental, with a pre-test-post-test design and a control group. The research population included all hypertensive patients who sought care at comprehensive health service centers in Sari City, Iran, in 2023. The research sample included 45 people with hypertension, selected through purposive sampling. Clients with hypertension were referred to specialists by physicians working in health service centers. One hundred fifty-eight clients completed the perceived stress questionnaire (PSQ) with hypertension seeking care at Sari City's comprehensive health service centers to collect data.

Among them, 45 people were selected based on scoring two standard deviations above the mean score on the

life stress questionnaire and meeting other study inclusion criteria.

The inclusion criteria for the study were as follows: Diagnosis of hypertension, the experience of perceived stress, defined as a score two standard deviations above the mean on the PSQ, without using psychiatric medications such as venlafaxine or paroxetine, no history of addiction, or any psychiatric disorder.

Participants were excluded if they withdrew consent, missed more than two sessions, experienced disease recurrence, or developed any physical illness during the intervention (Figure 1).

A qualified clinical psychologist at the Sari City Counseling Center implemented clinical interventions. Due to ethical considerations, before executing the project, while obtaining written consent from the participants, they were reminded that the information received from each member would remain completely confidential and that each member could withdraw from the training course at any time wished.

A total of 45 participants were divided into three groups of 15. The first group received intervention type 1 (ST), and the second group received intervention type 2 (ISTDP). The third group, as a control group, did not receive any intervention, and no sample dropout occurred in any of the groups during the study.

ISTDP intervention sessions were conducted for the experimental group, consisting of eleven 90-minute sessions. Concurrently, the ST protocol was administered to another experimental group of patients, involving nine 120-minute sessions. The control group did not receive any intervention. The experimental and control groups completed the PSQ before and after implementing the psychological interventions.

SPSS software, version 26 was utilized for descriptive and inferential statistical data analysis. The significance level was set at 0.05. Repeated measures analysis of variance (MANOVA) followed by the Bonferroni post hoc test for pairwise comparisons was used to analyze the data. Before conducting the study, Mauchly's test of sphericity for the assumption of sphericity, the Kolmogorov-Smirnov and Shapiro-Wilk tests for the normality of the data, and Levene's test for the assumption of equality of variances were conducted.

## Study measures

Demographic questionnaire included age, gender, education level, and employment status.

Cohen et al. (1983) developed the PSQ. The tool evaluates an individual's subjective stress experience during the previous month, examining cognitive appraisals, emotional responses to stressful situations, and perceived ability to manage psychological pressures [21]. This scale has 14 items that are scored on a 4-point Likert scale ("never" to "very much"), and each item has a score between 0 and 4. A score above 36 demonstrates high perceived stress, and below 18 indicates low perceived stress. Saadat et al. [22] reported the reliability of the questionnaire using the Cronbach  $\alpha$  method to be above 0.70. To calculate the validity of this scale, Cohen et al. calculated its correlation coefficient with symptomatology measures to be between 0.52 and 0.76 [21]. The construct validity coefficients of this questionnaire were calculated using simple correlation calculation with a researcher-made criterion question of 0.63, which was significant at the  $P < 0.05$  level [21]. Also, the Cronbach  $\alpha$  coefficient in this study was 0.726.

The protocol for the ISTDP intervention sessions consisted of eleven 90-minute sessions, which were implemented according to Davanlou's dynamic psychotherapy manual (1995) [23]. Young et al. designed the ST intervention session protocol, including nine 120-minute sessions [24] (Table 1).

## Results

The Mean $\pm$ SD age of the participants in the study was  $36.35 \pm 7.67$  years for women and about  $47 \pm 8.59$  years for men.

The first group consisted of 7 women and 8 men, while the second group had 3 women and 12 men. The control group included 5 women and 10 men. The age of participants in all three groups ranged from at least 20 years to a maximum of 55 years.

Regarding educational status, the first group had 7 women with diplomas, 4 men with bachelor's degrees, and 4 with master's degrees. The second group comprised 3 women with diplomas, 6 men with bachelor's degrees, and 6 with master's degrees. In the control group, there were 3 women with diplomas, 2 women with associate degrees, 6 men with bachelor's degrees, and 4 men with master's degrees. The first group included 10 employed individuals and 5 homemakers regarding employment

**Table 1.** The protocol of treatment plans

Session	ST Group	Short-term Dynamic Psychotherapy Group
1	Acquaintance and introduction of programs, communication, and empathy, evaluation of the initial situation of the group, explaining the rules of conducting treatment sessions, initial assessment of the problem, investigations on the type of “eleven” defenses	Explaining the rules of conducting treatment sessions and initial interviews, initial assessment of the problem
2	Suitable and effective interventions related to each type of “eleven” defenses, working with tactical defenses of closed words, speaking in the envelope” of comprehensive-covering words Effective intervention: Doubt, challenge, challenge with defense	Investigating the 11 defense mechanisms: Characteristics and therapeutic interventions
3	ST definition, getting to know and understanding schema concepts, treatment and how to use it, training and knowledge of the plan, accurate and scientific learning of concepts, primary incompatibility schemas	Working with tactical defenses of closed words, speaking in the envelope” of comprehensive-covering words Effective intervention: Doubt, challenge, challenge with defense
4	Introducing the fields of primary incompatible schemas, full familiarity with the areas of the plan, primary incompatible variables, and their diagnosis	Investigating the tactical defenses of indirect speech, pathological and possible thoughts, effective intervention: Challenge with defenses and clarify speech, challenge with defense and doubt in defense
5	Teaching and understanding the concept, cognitive coordination, and response to ineffective coping strategies, recognizing and adapting cognitive dissonance and dysfunctional coping reactions to personal experiences	Examining the defense of mental rumination and reasoning, effective interventions in order: Clarifying, asking for a definitive answer, doubting the defense, challenging the defense, challenging, blocking the defense
6	Assessment and training stage schema therapy, recognizing and recognizing the schema early incompatibles	Defenses of rationalization and generalization, effective interventions: Clarifying, blocking, challenging and clarifying, challenging with defense
7	Use strategies such as cognitive schema therapy, modification of layouts and styles, and ineffective coping	Distraction and forgetting tactics, effective interventions: Blocking the defense and doubting the defense, challenging the defense
8	Using experimental ST strategies, changing and improving the emotional level and emotional incompatible schemas	Denying and refuting, Effective interventions: clarifying, doubting defenses, and challenging defenses
9	Tutorials on pattern-breaking methods, replacing healthy behaviors, and efficient instead of confrontational and incompatible behaviors	Externalization and ambiguity, dodging, doubt and obsession (effective interventions: Clarification, challenge with defense)
10	----	Bodybuilding and acting as a defense against emotions (effective intervention: Clarification), rebellion, and disobedience Chinese introduction, defensive crying, and a range of retreating defenses (effective interventions: Confrontation, challenge and direct conflict, clarification)
11	----	Talking instead of touching feelings Non-verbal signs of compliance passivity, effective interventions: Clarification, doubt in defense, challenge with defense, enlightenment

Current Psychosomatic Research

status. The second group had 12 employed individuals and 3 homemakers, while the control group included 12 employed individuals and 3 homemakers. There was no significant difference between the three groups.

A summary of the demographic information of the study participants is reported in Table 2. The normality of the data was confirmed across all study variables using the Kolmogorov-Smirnov test ( $P > 0.001$ ). Through Levene's test, statistical analyses confirmed equal variance

between experimental and control groups at all assessment points (pre-test, post-test, and follow-up).

However, Mauchly's test revealed violations of sphericity assumptions in the covariance matrix, requiring the application of the Greenhouse-Geisser correction. Subsequent repeated measures MANOVA analysis yielded two key findings. First, a statistically significant between-group effect emerged for perceived stress, indicating differential outcomes among the study condi-

**Table 2.** Demographic information of research participants

Variables		Mean±SD/No. (%)
Age (Y)	Female	36.35±7.67
	Male	47±8.59
Gender	Female	32(71.11)
	Male	13(28.89)
Education level	Undergraduate	9(20)
	Graduate	24(53.33)
	Bachelor's and above	12(26.67)
Employment	Employed	35(77.78)
	Unemployed	10(22.22)

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tions. Second, a significant within-group time effect was observed, demonstrating measurable changes in variable means across the three assessment periods from baseline through follow-up. Table 3 shows the measures of central tendency and variability of the scores of the research variables in the two experimental and control groups.

The results of the analysis of variance for the within-group (time) and between-group (group) factors are significant (Table 3).

The results presented in Table 2 show that, as opposed to the control group, perceived stress in both the ST and dynamic psychotherapy groups in the post-test was lower than in the pre-test ( $P<0.001$ ). Moreover, the comparison of the two experimental groups showed that the score of the perceived stress variable in the ST and dynamic psychotherapy groups was significantly different from each other ( $P<0.001$ ). Thus, dynamic psycho-

therapy had a greater effect on reducing perceived stress than schema therapy.

Changes in the experimental group over time in Table 4 indicate that the perceived stress variable was significant in both ST and dynamic psychotherapy groups in the post-test compared to the pre-test ( $P<0.001$ ). Also, a significant difference was observed in both follow-up stages compared to the pre-test ( $P<0.001$ ). Still, in the follow-up stage, no significant difference was observed compared to the post-test ( $P>0.001$ ), which means that the therapeutic effects of both treatments are durable.

## Discussion

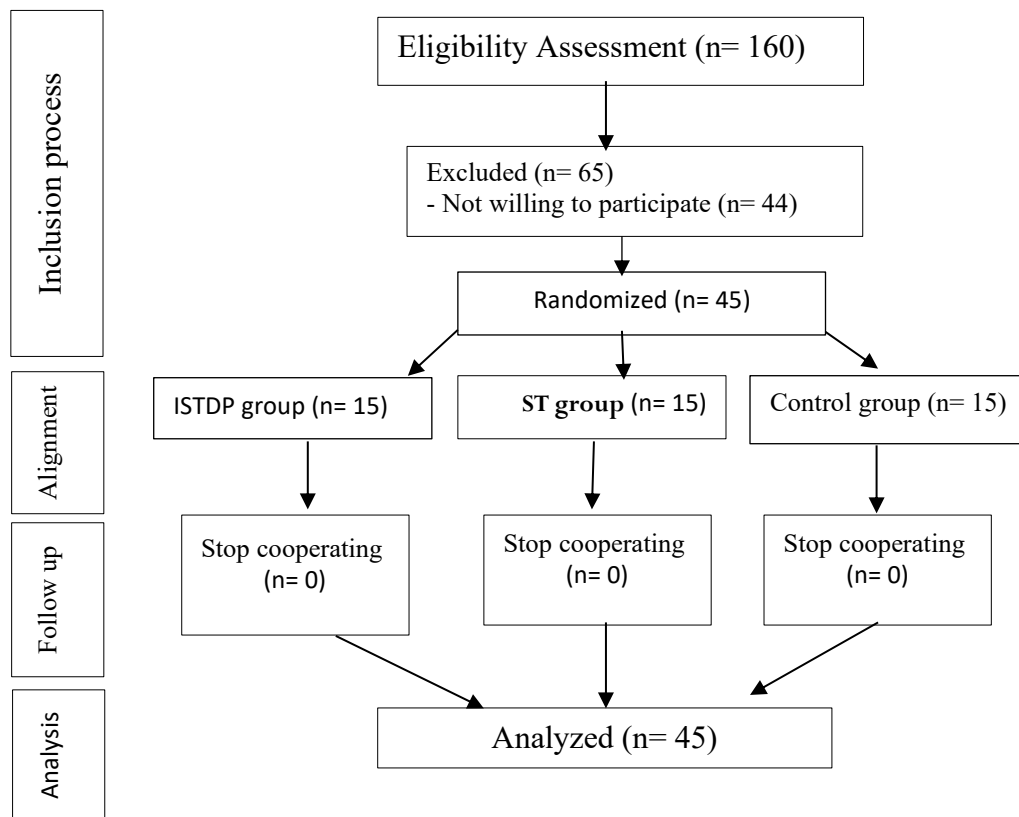
This study compared the efficacy of ISTDP and ST in reducing perceived stress among hypertensive patients. The findings demonstrate that ISTDP and ST are significantly more effective than the control condition in alleviating perceived stress, with treatment benefits persisting

**Table 3.** Measures of central tendency and variability of variable scores and results from analysis of variance

Group	Perceived Stress			P	η²
	Mean±SD				
	Pre-test	Post-test	Follow-up		
ST	39.2±7.86	33.46±6.83	34.06±5.96	0.001	0.40
ISTDP	38.08±7.59	29.73±5.7	30.17±5.88	0.001	0.69
Control	39.86±7.51	38.33±7.48	38.46±7.63	0.001	0.56

ISTDP: Intensive short-term dynamic psychotherapy; ST: Schema therapy.

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**Figure 1.** Randomization steps

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ISTDP: Intensive short-term dynamic psychotherapy; ST: Schema therapy.

**Table 4.** Results of the Bonferroni post hoc test of within-group effects on perceived stress in the experimental groups

Variable	Group	Time Test	Mean Difference	Standard Error	Sig.
Perceived stress	ST	Pre-test	4.74	2.33	0.001
		Post-test			
		Pre-test	4.53	2.63	0.001
		Follow-up			
		Post-test	0.4	1.46	0.632
		Follow-up			
	ISTDP	Pre-test	8.33	2.08	0.001
		Post-test			
		Pre-test	8.75	2.29	0.001
		Follow-up			
		Post-test	0.33	1.11	0.446
		Follow-up			

ISTDP: Intensive short-term dynamic psychotherapy; ST: Schema therapy.

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at follow-up assessments. Furthermore, a direct comparison between the two therapeutic approaches revealed that ISTDP produced superior stress-reduction outcomes compared to ST in this patient population. Regarding the effectiveness of ST on perceived stress in patients with hypertension, it should be acknowledged that this finding was consistent with the research of Zarei and Fooladvand [14], Mohammadi et al. [25], Hemmati Sabet et al. [26], Talayry and Bavi [27], and Kazemiani and Amiri [28].

ST allows patients to better adapt to current circumstances by identifying dysfunctional mental patterns and creating more adaptive responses to stressful situations and experienced stress. Schemas are a collection of memories, beliefs, emotions, and physical sensations that are relatively stable and can trigger stress in patients. According to this perspective, schemas are associated with unmet basic needs, and specific situations can activate them. If a schema is activated, it attacks the individual's current awareness, leading to psychological disturbance; therefore, effective ST strategies can mitigate the cognitive damage of perceived stress in patients suffering from hypertension by breaking negative repetitive patterns and with the help of the principle of cognitive dissonance [14].

Regarding the effectiveness of ISTDP on perceived stress in patients with hypertension, it should be acknowledged that there was no consistent research to explain this finding, and the current study is considered innovative in its own right.

According to the principles of the ISTDP approach, anxiety occurs as a result of unaccepted emotions and thoughts, and the individual resorts to defense mechanisms to escape anxiety. This approach emphasizes identifying the distinct physical symptoms of emotions and guiding the individual toward the experience of emotions and physical symptoms associated with anxiety. In this way, this therapeutic approach helps to understand the dynamic pathological forces and causes of patients' problems and assists them in resolving intrapersonal conflict.

As a result, this approach accepts emotions and provides a platform for their proper expression and discharge. Minimizing the use of maladaptive defense mechanisms facilitates psychological peace for the individual. Accordingly, identifying and experiencing stress effectively in cardiac patients significantly helps them to regulate and manage their current problems, and this improves the mental health of patients

by building their capacity, removing defenses, and expressing unexpressed emotions and feelings [29].

## Conclusion

This study demonstrates the efficacy of ST and ISTDP in reducing perceived stress among hypertensive patients. Future research should expand this investigation by exploring additional psychological variables in this population. Furthermore, implementing specialized training programs in these therapeutic approaches for clinicians and healthcare providers could enhance treatment quality and patient care outcomes.

## Study limitations

The limitations of the article include a few research studies related to the topic of the article and the purposive sampling, which makes the generalizability of the results biased.

## Study suggestions

It is suggested that future research use random sampling and control for the effects of confounding variables such as financial conditions. This research should be conducted on other exceptional disease groups, such as heart and diabetic patients and other diseases.

## Ethical Considerations

### Compliance with ethical guidelines

Patients were fully assured that their information would remain confidential and that they were allowed to withdraw from the trial if they did not consent. An attempt was made to keep the control group status constant until the end of the study.

This research has been approved by the Ethics Committee of [Shahr-e-Kord Branch, Islamic Azad University](#), Shahr-e-Kord, Iran (Code: IR.IAU.SHK.REC.1402.144) and was registered by the [Iranian Registry of Clinical Trials \(IRCT\)](#), Tehran, Iran (Code: IRCT20240505061653N1).

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### Authors' contributions

Review and writing of the final draft: Mahmoud Reza Hashem Varzi; Project supervision and management: Ahmad Ghazanfari; Final approval: All authors.

### Conflict of interest

The authors declared no conflict of interest.

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