

Effectiveness of Schema Therapy on Psychological Capital and Post-Traumatic Stress Disorder in At-Risk Women Referred to the Social Emergency Center of Amol County

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ABSTRACT

Objective: This study aimed to determine the effectiveness of schema therapy on psychological capital and post-traumatic stress disorder in at-risk women referred to the Social Emergency Center of Amol County.

Methods and Materials: The present applied study used a quasi-experimental pretest–posttest follow-up design with a control group. The statistical population consisted of all at-risk women aged 13 to 20 years who were referred to the Social Emergency Center (123) of Amol County during 2025–2026. From this population, 30 eligible participants were selected through purposive sampling and randomly assigned to an experimental group and a control group, with 15 participants in each group. The experimental group received eight 90-minute sessions of schema therapy, whereas the control group received no intervention. Data were collected using the Psychological Capital Questionnaire and the Post-Traumatic Stress Disorder Scale at pretest, posttest, and two-month follow-up stages. Data were analyzed using multivariate repeated-measures analysis of variance and pairwise comparisons.

Findings: The results showed significant effects for group, time, and the time × group interaction in the examined variables. Multivariate tests indicated that schema therapy had a significant effect on the group factor, Pillai's trace = .961, $F = 153.827$, $p < .001$, $\eta^2 = .961$; the time factor, Pillai's trace = .985, $F = 178.202$, $p < .001$, $\eta^2 = .985$; and the time × group interaction, Pillai's trace = .976, $F = 108.043$, $p < .001$, $\eta^2 = .976$. Pairwise comparisons showed significant reductions in post-traumatic stress disorder symptoms and significant increases in psychological capital in the schema therapy group compared with the control group at posttest and follow-up.

Conclusion: Schema therapy was effective in reducing post-traumatic stress disorder symptoms and increasing psychological capital in at-risk women, and its effects remained stable at the two-month follow-up.

Keywords: Schema therapy; psychological capital; post-traumatic stress disorder; at-risk women; social emergency.

1. Introduction

Women exposed to social, familial, and interpersonal harm constitute one of the most psychologically vulnerable groups in contemporary clinical and community mental health contexts. Their vulnerability is not merely the result of isolated stressful events, but often reflects repeated exposure to adverse developmental, relational, and environmental conditions such as domestic violence, insecure family systems, emotional deprivation, abandonment, neglect, social exclusion, and traumatic interpersonal experiences. In many cases, these women enter care systems after a prolonged period of cumulative stress in which their basic psychological needs for safety, attachment, autonomy, validation, and emotional stability have been repeatedly frustrated. Such conditions may compromise the individual's capacity to regulate emotions, establish secure relationships, maintain coherent self-worth, and construct adaptive beliefs about the self, others, and the future. Research on women affected by domestic violence has shown that victimization is closely related to affective dysregulation, reduced emotional capital, and persistent psychological distress, indicating that violence and relational trauma can undermine both clinical functioning and positive psychological resources (Khayatan et al., 2025). Similarly, women facing severe relational injuries, including marital infidelity, frequently experience depressive symptoms, sexual dysfunction, emotional insecurity, and disruptions in interpersonal trust, which highlight the broader psychological consequences of traumatic relational experiences (Ammari et al., 2023). Therefore, interventions for at-risk women should not be limited to crisis management or symptom reduction; rather, they should target deeper cognitive-emotional structures and strengthen psychological capacities that support recovery, resilience, and reintegration.

One of the most serious clinical outcomes associated with exposure to trauma is post-traumatic stress disorder (PTSD). PTSD is characterized by intrusive recollections, distressing memories, avoidance of trauma-related stimuli, emotional numbing, negative alterations in cognition and mood, and persistent hyperarousal. In individuals who have experienced chronic or interpersonal trauma, PTSD symptoms may become embedded in personality functioning and relational patterns, making recovery more complex than in cases of single-incident trauma. Evidence suggests that post-traumatic reactions are closely related to maladaptive cognitive schemas, psychological distress, and

impaired post-traumatic growth, particularly when individuals interpret trauma through rigid and negative beliefs about threat, vulnerability, defectiveness, guilt, mistrust, and loss of control (Delcea et al., 2023). Childhood trauma and PTSD symptoms have also been shown to be associated with early maladaptive schemas and schema modes, suggesting that traumatic experiences may shape enduring cognitive-emotional patterns that maintain distress across time (Spirou et al., 2022). In this regard, PTSD among at-risk women may not be fully understood through surface-level symptoms alone, because symptoms often represent the visible expression of deeper maladaptive schemas rooted in unsafe attachment experiences, repeated invalidation, and unresolved emotional pain.

Early maladaptive schemas are broad, pervasive, and dysfunctional patterns of memories, emotions, cognitions, and bodily sensations regarding oneself and relationships with others. These schemas typically develop when core emotional needs are not adequately met during childhood and adolescence. Once formed, they influence how individuals perceive themselves, interpret interpersonal events, respond to stress, and anticipate future outcomes. For women exposed to trauma, schemas such as abandonment, mistrust/abuse, emotional deprivation, defectiveness/shame, dependence, vulnerability to harm, and subjugation may become particularly salient. These schemas can intensify PTSD symptoms by causing trauma-related cues to be interpreted as evidence of continued danger, rejection, helplessness, or personal defectiveness. Studies on the relationship between early maladaptive schemas and psychological resources have shown that maladaptive schemas are negatively associated with psychological capital, indicating that dysfunctional cognitive-emotional structures can weaken hope, optimism, resilience, and self-efficacy (Elahian et al., 2025). In offender populations, early maladaptive schemas and personality traits have also been found to predict psychological capital, suggesting that deeply rooted schemas are relevant not only to psychopathology but also to the availability of adaptive psychological resources (S. Samani et al., 2022; Sedigheh Samani et al., 2022). These findings emphasize the need for therapeutic approaches that address the schema-level organization of distress while simultaneously promoting positive psychological capacities.

Psychological capital is a core construct in positive psychology and refers to a positive psychological state composed of self-efficacy, hope, resilience, and optimism. Self-efficacy enables individuals to believe in their capacity

to manage difficult tasks and cope with challenges; hope supports goal-directed motivation and the ability to identify pathways toward desirable outcomes; resilience allows individuals to recover from adversity and continue functioning despite setbacks; and optimism helps individuals maintain positive expectations about the future. For at-risk women, psychological capital may function as a protective resource against the consequences of trauma and social vulnerability. However, repeated exposure to violence, humiliation, rejection, and instability can erode these resources and lead to learned helplessness, hopelessness, emotional exhaustion, and pessimism. Research has shown that psychological capital is meaningfully related to family, marital, and psychological functioning. For example, psychological capital and early maladaptive schemas have been identified as predictors of marital burnout, showing that positive psychological resources and maladaptive schemas jointly influence emotional and relational outcomes (Kharratzadeh et al., 2021). Moreover, interventions designed to improve psychological capital among vulnerable or clinical populations have shown that these resources are modifiable and can be enhanced through structured psychological treatment (Moghanloo, 2022). Accordingly, psychological capital is not only an outcome variable but also a potential mechanism of recovery among trauma-exposed women.

Schema therapy is an integrative psychotherapy model developed to treat chronic, complex, and personality-based psychological problems. It combines elements of cognitive-behavioral therapy, attachment theory, experiential techniques, emotion-focused work, and limited reparenting. The primary goal of schema therapy is to identify and modify early maladaptive schemas and schema modes while helping clients develop a healthier adult mode capable of regulating emotions, meeting psychological needs in adaptive ways, and establishing healthier relationships. In trauma-related disorders, schema therapy is particularly relevant because it targets the cognitive and emotional meanings attached to traumatic experiences rather than merely reducing symptoms. A systematic review of schema therapy for anxiety disorders, obsessive-compulsive disorder, and PTSD has highlighted the potential value of this approach for disorders in which maladaptive beliefs, avoidance, and emotional dysregulation play central roles, while also emphasizing the need for further empirical research in trauma-related populations (Peeters et al., 2022). Recent clinical evidence also indicates that schema therapy can be effective in improving emotion regulation among

individuals with complex PTSD, which is especially important because emotion dysregulation is one of the main mechanisms through which trauma symptoms persist (Hatami et al., 2024). Therefore, schema therapy may be particularly suitable for at-risk women whose PTSD symptoms are intertwined with early emotional deprivation, attachment injuries, and maladaptive self-beliefs.

The therapeutic relevance of schema therapy has been supported across different clinical populations. In women with breast cancer, schema therapy has been shown to improve psychological capital, suggesting that modifying maladaptive schemas can strengthen positive psychological resources even in the context of serious medical stressors (Alizadeh et al., 2021). A comparative study also demonstrated that schema therapy and short-term psychodynamic therapy could influence psychological capital in women with breast cancer, further supporting the role of deeper therapeutic interventions in enhancing adaptive psychological functioning (Alizadeh et al., 2022). In patients with binge eating disorder seeking sleeve gastrectomy or gastric bypass surgery, group schema therapy was found to be effective in improving psychological capital, indicating that schema-based interventions can be beneficial in populations struggling with emotion regulation, body-related distress, and maladaptive coping patterns (Bozorgvari & Khosh-Lahjeh Sedgh, 2024). Schema therapy has also been reported to improve social adjustment and psychological capital in individuals with gender identity disorder, demonstrating its applicability to populations experiencing identity-related distress and social vulnerability (Eisazadeh et al., 2020). These studies collectively suggest that schema therapy can contribute to both symptom reduction and the strengthening of adaptive psychological resources.

In addition to its effects on psychological capital, schema therapy has been examined in populations experiencing relational, emotional, and medical stress. Among patients with multiple sclerosis, schema therapy and acceptance and commitment therapy have been compared in relation to emotional distress tolerance, sexual dysfunction, and psychological capital, indicating that schema-based interventions may affect both emotional and functional domains in chronic illness contexts (Nazari et al., 2022). In individuals with coronary artery disease and their spouses, schema therapy has been compared with integrated behavioral couples therapy and couple narrative therapy in terms of emotional capital and depression, suggesting that schema-focused treatment may have implications for both

individual and relational well-being (Bakoli Kermani et al., 2022). Among women injured by husbands' infidelity, spirituality-based schema therapy has been compared with emotionally focused therapy based on attachment injuries in relation to anxiety and affective capital, highlighting the relevance of schema work in women who have experienced attachment trauma and betrayal (Ghasemi Nejad Rini et al., 2022). These findings are important for the present study because at-risk women referred to social emergency services often experience overlapping forms of emotional injury, family instability, violence, betrayal, and social vulnerability, all of which may activate maladaptive schemas and weaken psychological capital.

The integration of schema therapy with trauma-focused conceptualizations is also supported by studies on women with co-occurring trauma-related and addictive problems. Schema therapy combined with eye movement desensitization and reprocessing has been examined in women with co-occurring substance use disorder and PTSD, suggesting that trauma-focused schema interventions may be clinically relevant for women with complex comorbid presentations (Tapia et al., 2019). This line of research is consistent with the view that trauma-related problems often require interventions capable of addressing both traumatic memories and enduring maladaptive schemas. Furthermore, research on post-traumatic growth has shown that emotional schemas and self-compassion play important roles in adaptation after traumatic bereavement, indicating that recovery from trauma involves not only symptom reduction but also transformation in emotional meaning-making and self-relating processes (Nikogoftar & Shourangiz, 2023). From a conservation of resources perspective, trauma can be understood as a process that depletes psychological, emotional, and social resources, whereas recovery requires rebuilding these resources and developing more adaptive cognitive-emotional structures (Delcea et al., 2023). Schema therapy may therefore serve as a bridge between clinical trauma treatment and positive psychological rehabilitation by reducing the power of maladaptive schemas while fostering healthier emotional regulation, self-efficacy, hope, and resilience.

The role of cognitive and emotional functioning in recovery should also be considered. Trauma and chronic stress can impair attention, memory, cognitive flexibility, emotional regulation, and future-oriented thinking. Cognitive rehabilitation research in individuals with depression has shown that interventions targeting prospective memory and cognitive flexibility can improve

capacities that are essential for adaptive functioning and psychological recovery (Pourjaberi et al., 2023). Although cognitive rehabilitation differs from schema therapy, both approaches emphasize the modifiability of psychological processes and the importance of strengthening adaptive functioning rather than focusing exclusively on pathology. For at-risk women, cognitive rigidity, trauma-related avoidance, and negative beliefs about the future may prevent effective coping and reduce engagement with supportive services. By helping individuals identify maladaptive schemas, challenge distorted meanings, process painful emotional memories, and practice healthier coping responses, schema therapy may enhance psychological flexibility and create conditions for improved psychological capital. Therefore, the intervention has the potential to influence both clinical symptoms, such as PTSD, and positive resources, such as hope, resilience, optimism, and self-efficacy.

Despite the growing body of research on schema therapy, psychological capital, and trauma-related symptoms, several gaps remain. First, many existing studies have focused on medical populations, marital problems, chronic illness, or specific clinical diagnoses, while fewer studies have examined at-risk young women referred to social emergency settings. Second, although schema therapy has been examined in relation to PTSD and complex trauma, there is still a need for applied research on its effectiveness in community-based crisis intervention contexts, particularly among women exposed to social harm. Third, psychological capital has often been studied as a positive psychological resource in organizational, educational, or medical contexts, but its role in the rehabilitation of socially vulnerable women with trauma symptoms requires further attention. Fourth, the simultaneous examination of PTSD and psychological capital is clinically important because effective treatment should both reduce psychological suffering and strengthen the resources required for long-term adaptation. Existing evidence indicates that schema-focused and emotion-focused interventions can improve affective and psychological capital among women exposed to violence and relational harm (Ghasemi Nejad Rini et al., 2022; Khayatan et al., 2025), but research is still needed to determine whether schema therapy can produce stable improvements in both trauma symptoms and positive psychological capacities among at-risk women in social emergency services.

Accordingly, the present study aimed to determine the effectiveness of schema therapy on psychological capital

and post-traumatic stress disorder in at-risk women referred to the Social Emergency Center of Amol County.

2. Methods and Materials

2.1. Study design and Participant

The present study was applied in terms of purpose and quasi-experimental in terms of method, using a pretest–posttest follow-up design with a control group. In this design, the independent variable, namely schema therapy, was administered to the experimental group, whereas the control group received no intervention during the study period. The dependent variables, including psychological capital and post-traumatic stress disorder, were measured in both groups at three stages: before the intervention, immediately after the completion of the intervention sessions, and two months later at the follow-up stage. The statistical population consisted of all at-risk women referred to the Social Emergency Center (123) of Amol County during 2025–2026. According to the records of the center, the total number of these individuals was 785, all of whom were between 13 and 20 years of age and had been admitted through mobile crisis teams or in-person referral due to conditions such as poor guardianship, domestic violence, running away from home, or acute emotional crises. Considering the quasi-experimental nature of the study and the recommended minimum sample size of 15 participants per group, 30 eligible women were selected through purposive sampling. Initially, individuals who met the inclusion criteria based on clinical records and initial interviews were identified from the statistical population. Then, among the volunteers, 30 participants were randomly assigned by simple random allocation, using a lottery method, to the experimental group and the control group, with 15 participants in each group. The inclusion criteria were being female, being between 13 and 20 years old, obtaining a score above the cut-off point on the post-traumatic stress disorder questionnaire, experiencing at least one traumatic event based on social work reports and clinical interviews, not receiving similar psychotherapy services during the previous six months, having at least middle-school literacy to respond to the questionnaires, and providing informed consent to participate in the treatment sessions. The exclusion criteria included absence from more than two treatment sessions, the occurrence of an acute psychological or physical crisis during the study that prevented continued participation, and voluntary withdrawal from the study at any stage.

2.2. Measures

The Psychological Capital Questionnaire (PCQ-24), developed by Luthans and colleagues in 2007, was used to assess psychological capital. This self-report instrument consists of 24 items and evaluates four core components of psychological capital, namely self-efficacy, hope, resilience, and optimism, with six items allocated to each component. The questionnaire is scored on a six-point Likert scale ranging from “strongly disagree” to “strongly agree.” Items 13, 20, and 23 are reverse-scored due to their content. Accordingly, the total score ranges from 24 to 144, with higher scores indicating a higher level of psychological capital. The validity of this scale has been confirmed in several international and domestic studies through statistical methods such as confirmatory factor analysis and convergent validity. Its reliability has also been reported as satisfactory, with a Cronbach’s alpha coefficient of approximately 0.89 for the total scale and above 0.70 for its subscales, indicating acceptable internal consistency for measuring positive psychological constructs.

The Post-Traumatic Stress Disorder Scale was used to measure the severity of PTSD symptoms. This instrument, developed by Weathers and colleagues, is one of the widely used tools for assessing post-traumatic stress disorder symptoms and consists of 17 items covering three main dimensions: emotional numbing and avoidance, re-experiencing the traumatic event, and hyperarousal. The emotional numbing and avoidance dimension refers to behaviors and feelings through which the individual avoids confronting negative emotions and reminders of the traumatic event and may experience emotional detachment. The re-experiencing dimension includes intrusive memories, nightmares, and physical reactions associated with reminders of the traumatic event, which often occur repeatedly and involuntarily and increase psychological distress. The hyperarousal dimension reflects increased sensitivity to environmental stimuli, insomnia, irritability, and intense physical reactions to stress, which may impair daily and social functioning. Responses are scored on a five-point Likert scale ranging from 0, meaning “not at all,” to 4, meaning “extremely.” The total score ranges from 17 to 85, and a score above 51 indicates a clinically significant level of PTSD symptoms. Higher scores indicate greater severity of post-traumatic stress disorder symptoms and a greater need for psychological intervention. In terms of psychometric properties, previous research has reported a Cronbach’s alpha coefficient of 0.93 for this questionnaire,

and its validity has been confirmed through factor analysis, indicating that the instrument has acceptable reliability and validity for assessing PTSD symptoms in clinical and social populations.

2.3. Intervention

The schema therapy protocol was implemented in eight 90-minute sessions for the experimental group. The first session focused on establishing a therapeutic relationship and conducting an initial assessment. In this session, the therapist introduced schema therapy and the treatment process and collected information about the participant's personal and family history, current problems, and main symptoms. The second session was devoted to teaching the concept of schemas. In this session, early maladaptive schemas such as abandonment, defectiveness or shame, and dependence were introduced, and their formation during childhood and their effects on psychological problems were discussed. The third session focused on identifying each participant's personal schemas. Tools such as Young's Schema Questionnaire were used to identify thoughts, emotions, and behaviors related to schemas and to increase the participant's awareness of schema-related experiences. In the fourth session, the identified schemas were analyzed, and their relationships with current problems, behavioral patterns, emotions, and interpersonal relationships were examined. The fifth session focused on modifying negative patterns and teaching coping skills. Cognitive-behavioral techniques such as cognitive restructuring, challenging dysfunctional beliefs, and behavioral change exercises were taught to reduce the effects of maladaptive schemas. The sixth session was devoted to communication skills and conflict resolution. Skills such as active listening, empathy, assertive emotional expression, and healthy strategies for resolving interpersonal conflicts were practiced. The seventh session focused on reducing past emotional suffering and strengthening forgiveness. In this session, the concept of forgiveness was explained, and forgiveness exercises, meditation, and relaxation techniques were used to reduce negative emotions. Finally, the eighth session was dedicated to evaluating therapeutic progress. Changes in schemas, behaviors, and relationships were reviewed, the skills learned during the intervention were reinforced, and planning was conducted to maintain the therapeutic gains after the completion of the sessions.

2.4. Data Analysis

The collected data were analyzed using descriptive and inferential statistical methods. At the descriptive level, means and standard deviations were used to describe the participants' demographic characteristics and the scores of psychological capital and post-traumatic stress disorder across the pretest, posttest, and follow-up stages in both the experimental and control groups. Before conducting the main inferential analyses, the assumptions required for repeated-measures analysis were examined. The Shapiro-Wilk test was used to assess the normality of the distribution of the study variables, and relevant assumptions concerning the relationships among dependent variables and the homogeneity of covariance matrices were evaluated using appropriate multivariate tests, including Bartlett's test and Box's M test. To determine the effectiveness of schema therapy on psychological capital and post-traumatic stress disorder over time, repeated-measures multivariate analysis of variance was performed. The effects of group, time, and the interaction between time and group were examined. When the assumption of sphericity was not met, the Greenhouse-Geisser correction was applied. In addition, pairwise comparisons were used to compare the mean scores of the two groups across the three assessment stages and to evaluate the stability of the intervention effects at follow-up. The level of statistical significance was considered at $p < 0.05$.

3. Findings and Results

The mean and standard deviation of participants' age were 16.03 ± 4.59 years in the control group and 16.50 ± 4.52 years in the schema therapy experimental group. Comparison of the means using analysis of variance also indicated no significant difference between the two groups in terms of mean age. The results of the Shapiro-Wilk normality test in the schema therapy experimental group showed that the distributions of post-traumatic stress disorder and psychological capital at the follow-up stage were not normal ($p < .05$). Therefore, due to the lack of normal distribution in these components, caution should be exercised in generalizing the results related to these variables.

Table 1

Mean Scores of the Pretest, Posttest, and Follow-up Stages for the Dependent Variables by Group and Assessment Stage

Dependent Variable	Group	Statistic	Pretest	Posttest	Follow-up	Between-Group Comparison	
Post-traumatic disorder	stress	Schema therapy	Mean	16.88	10.84	13.92	Pretest comparison between the two groups: F = 3.367, p = .050
Post-traumatic disorder	stress	Schema therapy	Standard deviation	1.24	1.28	1.29	
Post-traumatic disorder	stress	Control	Mean	17.46	16.92	15.50	Follow-up comparison between the two groups: F = 9.123, p = .0001
Post-traumatic disorder	stress	Control	Standard deviation	1.30	1.35	1.79	
Psychological capital		Schema therapy	Mean	4.73	11.76	9.30	Pretest comparison between the two groups: F = 0.227, p = .798
Psychological capital		Schema therapy	Standard deviation	1.58	2.51	2.63	
Psychological capital		Control	Mean	4.57	6.76	5.69	Follow-up comparison between the two groups: F = 59.457, p = .001
Psychological capital		Control	Standard deviation	1.27	1.27	1.15	

The results presented in Table 1 showed that there was no significant difference between the two groups in the pretest stage regarding the mean levels of post-traumatic stress disorder and psychological capital, indicating that the two groups were homogeneous at this stage. Comparison of the means at the posttest stage indicated a significant difference, demonstrating the effectiveness of the intervention, namely schema therapy, compared with the control group. Moreover, the significant difference between the two groups at the follow-up stage indicated the stability of the intervention effects.

To examine the effectiveness of schema therapy on post-traumatic stress disorder and psychological capital, multivariate repeated-measures analysis of variance was used. Therefore, the assumptions of this test were first examined for each variable. The results of Bartlett's test of sphericity indicated that the assumption of this test, namely

the correlation between the dependent variables, was met, $\chi^2 = 479.441$, $p < .001$. Then, Box's M test was used to examine the assumption of homogeneity of covariance matrices. The results showed that this assumption was not met for the examined components, Box's $M = 603.75$, $F(231, 7627.42) = 1.413$, $p < .001$. However, given the sample size of the two groups, this test can be considered robust against violation of this assumption. The results of the multivariate tests showed that the effect of schema therapy was significant for the group factor, Pillai's trace = .961, $F = 153.827$, $p < .001$, $\eta^2 = .961$; for the time factor, Pillai's trace = .985, $F = 178.202$, $p < .001$, $\eta^2 = .985$; and for the time $\times$ group interaction effect, Pillai's trace = .976, $F = 108.043$, $p < .001$, $\eta^2 = .976$. These results indicate that the schema therapy intervention was effective on the examined dimensions. The full results of the multivariate tests are presented in Table 2.

Table 2

Results of the Test for Comparing Between-Group Effects in the Experimental and Control Groups

Variable	Sum of Squares	df	Mean Square	F	p	η^2
Post-traumatic stress disorder	97.855	1	97.855	71.655	.001	.589
Post-traumatic stress disorder	91.558	1	91.558	99.362	.001	.665
Psychological capital	111.077	1	111.077	40.737	.001	.449

The results of the within-subjects effect test for comparing the assessment stages in the two groups also showed that the effect of time was significant for post-traumatic stress disorder, $FGG(1.63) = 186.21$, $p < .001$, η^2

$= .788$, and psychological capital, $FGG(1.63) = 186.21$, $p < .001$, $\eta^2 = .788$. The full results of this analysis are presented in Table 3.

Table 3

Results of the Within-Subjects Effect Test for Examining the Effectiveness of Schema Therapy on the Examined Dimensions

Variable	Test	Sum of Squares	df	Mean Square	F	p	η^2
Post-traumatic stress disorder	Greenhouse–Geisser	304.321	1.919	158.619	177.248	.001	.780
Psychological capital	Greenhouse–Geisser	563.897	1.968	286.597	279.796	.001	.848

Subsequently, pairwise comparisons were used to compare the mean scores of the two groups across the three assessment stages in order to examine both the effectiveness

of the intervention and the stability of treatment effects at the follow-up stage. The results of this analysis are presented in Table 4.

Table 4

Pairwise Comparison of the Experimental and Control Groups Across the Assessment Stages

Component	Assessment Stage	Group 1	Group 2	Mean Difference	Standard Error	p
Post-traumatic stress disorder	Pretest	Schema therapy	Control	-0.577	0.353	.109
Post-traumatic stress disorder	Posttest	Schema therapy	Control	-6.077	0.366	.001
Post-traumatic stress disorder	Follow-up	Schema therapy	Control	-1.577	0.434	.001
Psychological capital	Pretest	Schema therapy	Control	0.154	0.399	.701
Psychological capital	Posttest	Schema therapy	Control	5.00	0.554	.001
Psychological capital	Follow-up	Schema therapy	Control	3.615	0.564	.001

The results of this study showed that the schema therapy intervention was effective on the examined dimensions in the experimental group compared with the control group. Moreover, the comparison of the mean scores of the two groups at the posttest and follow-up stages indicated the stability of the intervention effect in the experimental group.

4. Discussion

The present study aimed to determine the effectiveness of schema therapy on psychological capital and post-traumatic stress disorder in at-risk women referred to the Social Emergency Center of Amol County. The findings showed that the experimental and control groups did not differ significantly in the pretest stage in terms of post-traumatic stress disorder and psychological capital, indicating initial homogeneity between the two groups. However, after the implementation of the schema therapy protocol, a significant difference emerged between the experimental and control groups at the posttest stage. Specifically, schema therapy led to a significant reduction in post-traumatic stress disorder symptoms and a significant increase in psychological capital among women in the experimental group. The follow-up findings further indicated that these changes were not temporary, because the significant differences between the groups remained stable two months after the intervention. The multivariate repeated-measures results also confirmed significant effects of group, time, and the interaction

between time and group, suggesting that the observed improvements were attributable to the schema therapy intervention rather than to the mere passage of time. Therefore, the overall pattern of findings supports the effectiveness of schema therapy as a structured psychological intervention for reducing trauma-related symptoms and strengthening positive psychological capacities in at-risk women.

The significant reduction in post-traumatic stress disorder symptoms can be explained by the central mechanisms of schema therapy. At-risk women often experience traumatic events not as isolated incidents but as repeated interpersonal injuries that become internalized in the form of early maladaptive schemas. Such schemas shape the individual's interpretation of danger, self-worth, trust, control, and interpersonal safety. When schemas such as abandonment, mistrust/abuse, defectiveness/shame, vulnerability to harm, and emotional deprivation are activated, trauma reminders may be interpreted as evidence that the world remains unsafe and that the self is powerless or unworthy of protection. This mechanism is consistent with evidence showing that PTSD symptoms are closely related to early maladaptive schemas and schema modes, particularly among individuals with histories of childhood trauma and chronic psychological distress (Spirou et al., 2022). The present findings are also in line with studies indicating that maladaptive cognitive schemas contribute to post-traumatic distress and interfere with post-traumatic growth by depleting psychological

resources and maintaining negative appraisals of the self and the world (Delcea et al., 2023). Therefore, the reduction of PTSD symptoms in this study may be attributed to the intervention's focus on identifying, emotionally processing, and modifying the schema-based meanings attached to traumatic experiences.

Schema therapy may have reduced PTSD symptoms by helping participants move from trauma-dominated modes toward more adaptive modes of self-regulation. In many traumatized individuals, the "vulnerable child" mode carries feelings of fear, shame, helplessness, abandonment, and emotional deprivation, while coping modes such as avoidance, surrender, or overcompensation maintain distress in the long term. Through limited reparenting, experiential techniques, cognitive restructuring, imagery work, and behavioral pattern breaking, schema therapy helps clients recognize these modes and respond to them through a healthier adult position. This process can reduce avoidance, emotional numbing, intrusive distress, and hyperarousal because the traumatic memory is no longer processed only as an immediate threat but becomes integrated into a more coherent and regulated psychological narrative. The present result is consistent with systematic evidence indicating that schema therapy is a promising treatment approach for anxiety disorders, obsessive-compulsive disorder, and PTSD, particularly when symptoms are maintained by rigid maladaptive beliefs and emotional avoidance (Peeters et al., 2022). It is also aligned with findings showing that schema therapy can improve emotion regulation in individuals with complex post-traumatic stress disorder, which is clinically important because dysregulated affect is one of the core maintaining mechanisms of trauma-related psychopathology (Hatami et al., 2024). Moreover, the effectiveness of schema therapy in trauma-related and comorbid conditions has been supported in women with co-occurring substance use disorder and PTSD, where schema-focused work combined with trauma processing contributed to clinical improvement (Tapia et al., 2019).

The increase in psychological capital among participants in the experimental group is another important finding of the present study. Psychological capital consists of self-efficacy, hope, resilience, and optimism, all of which are typically weakened in women who have experienced violence, neglect, insecurity, humiliation, and repeated interpersonal trauma. Schema therapy may enhance psychological capital by changing the deep beliefs that prevent individuals from perceiving themselves as capable, valuable, hopeful, and resilient. For example, when the schema of

defectiveness/shame is modified, the individual may experience greater self-acceptance and self-efficacy. When abandonment and mistrust schemas are weakened, the individual may gradually regain hope in relationships and the future. When vulnerability and failure schemas are challenged, resilience and optimism may increase because the individual begins to perceive adversity as manageable rather than overwhelming. This interpretation is consistent with research showing a meaningful relationship between early maladaptive schemas and psychological capital in children of veterans, indicating that schema patterns can influence the development or depletion of positive psychological resources (Elahian et al., 2025). Similarly, studies among criminal offenders have shown that psychological capital can be predicted by early maladaptive schemas and personality characteristics, further supporting the idea that psychological capital is deeply connected to underlying cognitive-emotional structures (S. Samani et al., 2022; Sedigheh Samani et al., 2022).

The present findings are also consistent with empirical evidence demonstrating that schema therapy can improve psychological capital in different clinical and vulnerable populations. In women with breast cancer, schema therapy has been shown to enhance psychological capital, suggesting that the modification of maladaptive schemas may help individuals mobilize positive psychological resources even under severe stress conditions (Alizadeh et al., 2021). A comparative study also showed that schema therapy and short-term psychodynamic therapy were effective in improving psychological capital in women with breast cancer, which supports the broader assumption that therapies addressing deep emotional and personality structures may be useful for strengthening adaptive psychological capacities (Alizadeh et al., 2022). The present results also align with evidence from patients with binge eating disorder seeking bariatric surgery, where group schema therapy improved psychological capital, indicating that schema-based interventions can be effective among individuals whose psychological distress is associated with maladaptive self-beliefs, emotion dysregulation, and dysfunctional coping (Bozorgvari & Khosh-Lahjeh Sedgh, 2024). In addition, schema therapy has been reported to improve social adjustment and psychological capital in individuals with gender identity disorder, suggesting that schema work may be especially relevant for groups exposed to identity-related stress and social vulnerability (Eisazadeh et al., 2020). The convergence of these findings supports the conclusion that schema therapy can strengthen psychological capital across

diverse populations by modifying the deeper psychological structures that limit hope, resilience, optimism, and self-efficacy.

The effectiveness of schema therapy in the present study can also be interpreted in relation to the specific condition of women exposed to social harm. Many at-risk women have experienced attachment injuries, domestic violence, betrayal, family instability, and emotional deprivation. These experiences can weaken affective and psychological resources while increasing anxiety, depression, and trauma-related symptoms. The present findings are consistent with research showing that emotional schema therapy, forgiveness-based compassion therapy, and cognitive-behavioral therapy can improve affective capital in women victims of domestic violence, emphasizing that women exposed to violence require interventions that directly address emotional meaning systems and self-protective patterns (Khayatan et al., 2025). The findings are also compatible with research on women affected by infidelity, where couple therapy was associated with improvement in depressive symptoms and sexual functioning, demonstrating that relational trauma can have extensive emotional and psychological consequences requiring targeted therapeutic intervention (Ammari et al., 2023). Furthermore, studies comparing emotionally focused therapy based on attachment injuries and spirituality-based schema therapy among women injured by husbands' infidelity have shown that schema-oriented interventions can reduce anxiety and improve affective capital (Ghasemi Nejad Rini et al., 2022). These studies support the present finding that schema therapy is particularly relevant for women whose psychological problems are rooted in relational harm and unmet emotional needs.

The stability of the intervention effects at follow-up is theoretically meaningful. Unlike short-term supportive or crisis-centered interventions, schema therapy does not only aim to reduce immediate distress; it seeks to restructure enduring cognitive-emotional patterns and strengthen healthier modes of functioning. The maintenance of improvement in the follow-up stage suggests that participants may have internalized some of the therapeutic skills and schema-based insights acquired during the sessions. This finding is compatible with research showing that psychological capital and early maladaptive schemas are associated with long-term relational and emotional functioning, including marital burnout and psychological adjustment (Kharratzadeh et al., 2021). It is also consistent with studies comparing schema therapy with other

therapeutic approaches in chronic health and couple-related problems, where schema therapy influenced emotional capital and depression in individuals with coronary artery disease and their spouses (Bakoli Kermani et al., 2022). These findings suggest that schema therapy may have durable effects because it targets the emotional and relational patterns that maintain distress across situations. In the present study, this durability may have been reinforced by the intervention's emphasis on recognizing personal schemas, understanding their developmental roots, practicing new coping strategies, strengthening communication skills, and planning for the maintenance of therapeutic gains.

The increase in psychological capital and decrease in PTSD symptoms may also be interdependent. Trauma symptoms can reduce psychological capital by generating helplessness, avoidance, pessimism, and low self-efficacy. Conversely, low psychological capital may intensify PTSD symptoms by weakening coping capacity and preventing adaptive reinterpretation of traumatic experiences. Therefore, schema therapy may have operated through a dual pathway: first, by reducing maladaptive schemas and trauma-related emotional activation, and second, by strengthening the participant's sense of agency, hope, resilience, and optimism. This explanation is consistent with research on psychological capital and well-being in daughters of veterans of the Iran-Iraq war, which showed that schema therapy can improve psychological well-being, perceived social support, and psychological capital in individuals exposed to intergenerational stress and vulnerability (Moghanloo, 2022). It is also supported by findings in patients with multiple sclerosis, where schema therapy and acceptance and commitment therapy affected emotional distress tolerance, sexual dysfunction, and psychological capital, suggesting that psychological capital is sensitive to interventions that target deeper emotional and cognitive processes (Nazari et al., 2022). Moreover, research on cognitive rehabilitation in depression has emphasized the importance of cognitive flexibility and future-oriented functioning in psychological recovery, which is relevant because schema therapy may also increase flexibility by weakening rigid maladaptive beliefs and promoting healthier interpretations of self and experience (Pourjaberi et al., 2023).

5. Conclusion

The findings may be interpreted within the framework of post-traumatic growth and adaptive emotional reconstruction. For at-risk women, recovery does not only mean the reduction of intrusive memories or hyperarousal; it also involves rebuilding a sense of meaning, agency, self-compassion, and future orientation. Research on women bereaved by the death of their husbands due to COVID-19 has shown that emotional schemas and self-compassion are important in modeling post-traumatic growth, suggesting that recovery after trauma depends on how individuals organize and transform emotional meanings (Nikogoftar & Shourangiz, 2023). Schema therapy can facilitate this transformation by helping clients differentiate between the traumatized self and the healthy adult self, challenge punitive or shame-based internal voices, and develop more compassionate and adaptive responses to emotional pain. In the present study, such processes may explain why participants not only reported fewer PTSD symptoms but also demonstrated increased psychological capital. Therefore, the findings support the view that schema therapy can function as both a trauma-focused and resource-building intervention, making it especially appropriate for socially vulnerable women whose clinical symptoms and positive psychological capacities are closely intertwined.

6. Limitations and Suggestions

One limitation of the present study was its relatively small sample size and the restriction of the sample to at-risk women referred to the Social Emergency Center of Amol County. Although the quasi-experimental design and follow-up assessment strengthened the internal value of the findings, the limited sample may reduce the generalizability of the results to other populations, age groups, regions, and clinical settings. Another limitation was the use of self-report questionnaires, which may be influenced by response bias, social desirability, limited insight, or participants' emotional state at the time of assessment. In addition, the follow-up period was limited to two months, and this duration may not be sufficient to determine the long-term stability of therapeutic gains in women exposed to chronic social and familial stressors. Finally, environmental factors such as family support, ongoing exposure to violence, economic hardship, legal problems, or access to community resources were not fully controlled, although these factors may influence treatment outcomes.

Future studies are suggested to replicate this research with larger samples and in different cities and social emergency centers in order to improve the external validity of the findings. It is also recommended that future research compare schema therapy with other trauma-focused interventions such as eye movement desensitization and reprocessing, trauma-focused cognitive-behavioral therapy, acceptance and commitment therapy, and compassion-focused therapy. Longer follow-up periods, such as six months or one year, should be used to examine whether improvements in PTSD symptoms and psychological capital remain stable over time. Future studies may also benefit from mixed-method designs, combining quantitative measures with qualitative interviews to explore participants' lived experiences of schema change, emotional recovery, and reconstruction of psychological resources. In addition, examining mediating variables such as emotion regulation, self-compassion, perceived social support, cognitive flexibility, and schema modes could clarify the mechanisms through which schema therapy produces change.

From a practical perspective, the findings suggest that schema therapy can be incorporated into psychological services provided by social emergency centers and crisis intervention systems for at-risk women. Training psychologists, counselors, and social workers in schema-based assessment and intervention may help these centers move beyond short-term crisis management toward deeper psychological rehabilitation. It is also recommended that structured schema therapy protocols be adapted for adolescents and young women exposed to domestic violence, poor guardianship, running away from home, emotional crisis, and traumatic interpersonal experiences. In practice, schema therapy may be combined with family counseling, social support services, legal protection, and educational programs to create a more comprehensive recovery pathway. Such integrated services can help at-risk women reduce trauma-related distress, strengthen psychological capital, improve interpersonal functioning, and maintain therapeutic gains in their real-life environments.

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

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Declaration of Interest

The authors report no conflict of interest.

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Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

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