

Investigating the Effectiveness of Schema Therapy on Intolerance of Uncertainty, Rejection Sensitivity, and Self-Critical Rumination in Women Victims of Emotional Abuse

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ABSTRACT

Objective: The present study aimed to investigate the effectiveness of schema therapy on intolerance of uncertainty, rejection sensitivity, and self-critical rumination among women victims of emotional abuse.

Methods and Materials: In terms of purpose, this study was applied research, and in terms of design, it was a quasi-experimental study employing a pretest–posttest design with follow-up and a control group. The statistical population consisted of all women victims of emotional abuse who referred to counseling centers, psychological clinics, and support centers for victims of unhealthy relationships in Tehran in 2025. The research sample was selected using purposive and convenience sampling methods and included 30 women who, after meeting the inclusion criteria and completing informed consent forms, were randomly assigned to an experimental group (n = 15) and a control group (n = 15). The experimental group received schema therapy intervention during 10 weekly 60-minute sessions, whereas the control group received no intervention during this period. Data were collected using the Intolerance of Uncertainty Questionnaire (Carleton et al., 2007), the Rejection Sensitivity Scale (Downey & Feldman, 1996), and the Self-Critical Rumination Questionnaire (Smart et al., 2016). The instruments demonstrated adequate validity and reliability in both Iranian and international samples. Data were collected at three stages, including pretest, posttest, and follow-up, and were analyzed using repeated-measures analysis of variance in IBM SPSS Statistics.

Findings: The findings indicated that schema therapy significantly reduced intolerance of uncertainty, rejection sensitivity, and self-critical rumination in the experimental group compared with the control group ($p < .001$), and these improvements remained stable at the follow-up stage. Furthermore, the large effect sizes and complete statistical power indicated the strong and robust effectiveness of the intervention.

Conclusion: Based on the findings, it can be concluded that schema therapy is an effective approach for reducing the cognitive-emotional vulnerabilities of women victims of emotional abuse and may be implemented as an empowering psychological intervention in counseling and support service centers.

Keywords: Schema therapy, intolerance of uncertainty, rejection sensitivity, self-critical rumination, women victims of emotional abuse

1. Introduction

Emotional abuse in intimate relationships is one of the most pervasive but often underrecognized forms of violence against women, because unlike physical violence, its injuries are frequently embedded in chronic patterns of humiliation, control, invalidation, intimidation, emotional deprivation, blame, and psychological manipulation. Women exposed to emotional abuse often experience persistent disruptions in self-worth, interpersonal trust, emotion regulation, and perceived safety, even when overt physical injury is absent. Recent evidence has emphasized that emotional abuse victimization requires specific clinical attention because its psychological consequences may be deep, cumulative, and resistant to spontaneous recovery (Karakurt et al., 2025). In this regard, intimate partner violence is no longer understood merely as a set of isolated aggressive acts, but as a relational trauma context that can affect women's cognitive schemas, affective functioning, future orientation, and interpersonal expectations (Wessells & Kostelny, 2022). Studies on women exposed to gender-based and domestic violence have shown that psychological outcomes include depressive symptoms, impaired neuropsychological functioning, emotional instability, reduced self-efficacy, and persistent vulnerability to anxiety-related processes (Cabras et al., 2020; Torres García et al., 2021). Therefore, interventions for women victims of emotional abuse must address not only overt symptoms but also the deeper cognitive-emotional structures through which the abuse experience continues to shape self-perception and relationship patterns.

A central psychological consequence of emotional abuse is the disruption of basic assumptions about safety, predictability, and personal control. In abusive intimate relationships, women may repeatedly encounter unpredictable criticism, rejection, emotional withdrawal, threats, or invalidation, which gradually increases their sensitivity to uncertainty. Intolerance of uncertainty refers to a dispositional difficulty in accepting the possibility of unknown or ambiguous outcomes and is considered a transdiagnostic cognitive vulnerability involved in anxiety, worry, and emotion dysregulation (Carleton et al., 2007). Contemporary theoretical accounts describe intolerance of uncertainty as a core psychological process through which individuals interpret ambiguous situations as threatening and engage in excessive cognitive and behavioral attempts to reduce uncertainty (Dugas et al., 2026). In the context of intimate partner violence, uncertainty may become

particularly salient because victims often cannot predict the partner's emotional responses, relational stability, or potential escalation of abuse. Empirical findings have shown that intolerance of uncertainty is meaningfully associated with intimate partner violence experiences, especially during periods of social stress and relational instability (Bell et al., 2025). Similarly, research on women affected by infidelity and relational trauma indicates that therapeutic approaches such as acceptance and commitment therapy and mindfulness-based cognitive therapy can reduce intolerance of uncertainty, suggesting that this construct is modifiable through psychological intervention (Parham, 2023).

The importance of intolerance of uncertainty is also supported by broader evidence linking it with anxiety, sensory sensitivity, worry, and maladaptive cognitive-emotional processes. For instance, intolerance of uncertainty has been found to predict anxiety in emerging adults, with sex differences and sensory sensitivity contributing to individual vulnerability (Panchyshyn et al., 2023). In clinical populations, intolerance of uncertainty is also associated with worry, metacognitive beliefs, and deficits in cognitive emotion regulation, suggesting that individuals who cannot tolerate ambiguous conditions may become trapped in repetitive cycles of threat monitoring and anticipatory distress (Besharat et al., 2015). Among women who have experienced emotional abuse, these processes may be intensified because uncertainty is not merely abstract but rooted in lived relational experiences in which safety and acceptance were unstable. As a result, reducing intolerance of uncertainty may represent a critical therapeutic target in interventions designed for victims of emotional abuse.

Another major vulnerability in emotionally abused women is rejection sensitivity. Rejection sensitivity is defined as the anxious expectation, heightened perception, and intense reaction to possible rejection in interpersonal situations (Downey & Feldman, 1996). In intimate relationships, rejection-sensitive individuals may interpret ambiguous partner behaviors as signs of abandonment, disapproval, or emotional withdrawal, which can lead to distress, hypervigilance, defensive reactions, or maladaptive relational strategies. Systematic review and meta-analytic evidence has confirmed that rejection sensitivity is strongly related to romantic relationship outcomes, including insecurity, conflict, dissatisfaction, and negative emotional responses (Mishra & Allen, 2023). Actor-partner models have further shown that rejection sensitivity can predict relationship outcomes not only for the individual but also for the partner, indicating that rejection-related expectations

operate within dyadic systems and can influence relational functioning at multiple levels (Mishra et al., 2024). In women victims of emotional abuse, rejection sensitivity may become especially pronounced because repeated invalidation, neglect, criticism, or abandonment threats reinforce the belief that acceptance is conditional and unstable.

Iranian studies also support the clinical relevance of rejection sensitivity in women's interpersonal and marital functioning. Rejection sensitivity has been linked to attitudes toward infidelity through marital communication transparency and social network use among conflicted couples, suggesting that fear of rejection may interact with communication deficits and relational insecurity (Abedini et al., 2025). In another study, covert relational aggression among Iranian women was predicted by dark personality traits through the mediating roles of shame and rejection sensitivity, highlighting the role of rejection-related vulnerability in women's emotional and interpersonal responses (Rasouli et al., 2024). Psychometric research in Iran has also supported the validity of the Rejection Sensitivity Questionnaire, indicating that rejection sensitivity is a measurable and culturally relevant construct in Iranian samples (Khoshkam et al., 2014). Moreover, experimental and clinical findings suggest that schema therapy can reduce rejection sensitivity in patients with borderline personality disorder, which is important because rejection sensitivity is often maintained by early maladaptive schemas, abandonment fears, and maladaptive coping styles (Farmanbar et al., 2023). Thus, rejection sensitivity is both theoretically and clinically connected to schema-based interventions.

Self-critical rumination is another important cognitive-emotional process among women exposed to emotional abuse. Self-critical rumination refers to repetitive thinking focused on perceived personal flaws, failures, inadequacies, and self-blame (Smart et al., 2016). Unlike adaptive self-reflection, self-critical rumination is repetitive, harsh, and emotionally dysregulating, and it may maintain psychological distress by repeatedly activating shame, guilt, helplessness, and negative self-evaluation. The construct has been validated in different cultural contexts, including Spanish-speaking samples, where it has been shown to mediate the relationship between emotion regulation and psychopathology (Martinez-Sanchis et al., 2021). In Iran, the Persian version of the Self-Critical Rumination Scale has demonstrated acceptable psychometric properties, supporting its use for assessing repetitive self-critical

thought processes in Iranian populations (Shahian et al., 2024). Self-critical rumination is particularly relevant for women victims of emotional abuse because abusive partners often use blame, humiliation, gaslighting, and devaluation, which may become internalized as enduring self-critical schemas.

The role of self-criticism in trauma-related distress has received increasing empirical support. Among women victims of intimate partner violence, self-criticism and low self-acceptance have been associated with posttraumatic stress symptoms, while self-efficacy may buffer these negative effects (Crapolicchio et al., 2021). Research has also shown that self-critical rumination and associated metacognitions mediate the relationship between perfectionism and self-esteem, indicating that repetitive self-criticism may serve as a pathway through which rigid self-evaluative beliefs damage psychological functioning (Fearn et al., 2022). In adolescents, self-critical rumination has been found to mediate the relationship between cyberbullying victimization and psychological distress, demonstrating that victimization experiences may lead to distress partly through internalized self-critical thinking (Alipour Parvaj et al., 2025). These findings are conceptually consistent with emotional abuse dynamics, in which repeated interpersonal degradation may be transformed into self-directed criticism and chronic rumination. Consequently, decreasing self-critical rumination may be essential for improving emotional recovery in women who have experienced psychological abuse.

Schema therapy offers a theoretically integrated and clinically powerful framework for understanding and treating these vulnerabilities. Developed to address chronic psychological problems rooted in unmet emotional needs and early maladaptive schemas, schema therapy combines cognitive, experiential, behavioral, and relational techniques to modify enduring patterns of perception, emotion, and coping (Young & Brown, 2019). From a schema therapy perspective, emotional abuse can activate and reinforce schemas such as abandonment, mistrust/abuse, emotional deprivation, defectiveness/shame, subjugation, and vulnerability to harm. These schemas may then manifest as intolerance of uncertainty, rejection sensitivity, and self-critical rumination. For example, a woman with a mistrust/abuse schema may interpret ambiguity as danger; a woman with abandonment or defectiveness schemas may perceive relational uncertainty as rejection; and a woman with a punitive parent mode may engage in persistent self-critical rumination. Therefore, schema therapy is especially

relevant because it targets the deeper schema structures and modes that maintain cognitive-emotional vulnerability after relational trauma.

Recent intervention studies support the usefulness of schema-based and related approaches for women exposed to betrayal, domestic violence, and emotional injury. Schema therapy has been shown to improve mental health in women after betrayal when compared with acceptance and commitment therapy, suggesting its applicability to relational trauma and post-betrayal psychological difficulties (Najari et al., 2023). Mindfulness-based schema therapy has also demonstrated efficacy in reducing emotional reactivity and internal shame among betrayed women, indicating that schema-focused interventions may be especially effective when shame, self-blame, and dysregulated emotional responses are central clinical targets (Ghaei et al., 2025). Furthermore, emotional schema therapy, forgiveness-based compassion therapy, and cognitive-behavioral therapy have been compared in women victims of domestic violence, with findings supporting the value of structured psychological interventions for restoring affective resources in this population (Khayatan et al., 2025). These studies collectively suggest that interventions which address maladaptive schemas, emotional meanings, self-judgment, and relational expectations may be particularly suitable for women who have experienced emotional abuse.

The broader literature on intimate partner violence also underscores the necessity of developing specialized psychological interventions. During the early stages of the COVID-19 pandemic, intimate partner violence victimization and perpetration were observed among adults, highlighting how contextual stressors may intensify relational violence and psychological vulnerability (Davis et al., 2021). Screening and early identification remain important because many women do not spontaneously disclose abuse, and health professionals may face barriers in asking about domestic abuse in clinical contexts (Kirk & Bezzant, 2020). Interventions in antenatal and health service settings have shown that structured screening for domestic violence can improve identification and referral, which is particularly important for integrating psychological care into broader support systems (Duchesne et al., 2021). However, identification alone is insufficient; women who have experienced emotional abuse require interventions capable of addressing internalized trauma, maladaptive beliefs, and persistent emotional dysregulation.

Despite growing evidence on emotional abuse, intimate partner violence, intolerance of uncertainty, rejection

sensitivity, self-critical rumination, and schema therapy, several gaps remain. First, many intervention studies on abused women focus broadly on depression, anxiety, posttraumatic stress, or general mental health, while fewer studies examine specific transdiagnostic and schema-related processes such as intolerance of uncertainty, rejection sensitivity, and self-critical rumination simultaneously. Second, although rejection sensitivity and self-critical rumination have been studied in romantic, clinical, and student samples, their combined reduction through schema therapy in women victims of emotional abuse has received limited empirical attention. Third, while schema therapy has theoretical relevance for abuse-related schemas and modes, more quasi-experimental evidence is needed to determine whether it can produce stable improvements across posttest and follow-up stages in women who have experienced emotional abuse. Addressing these gaps can contribute to both clinical practice and the development of trauma-informed interventions for women in counseling, psychotherapy, and support settings.

The aim of the present study was to investigate the effectiveness of schema therapy on intolerance of uncertainty, rejection sensitivity, and self-critical rumination in women victims of emotional abuse.

2. Methods and Materials

2.1. Study Design and Participants

The present study was applied research in terms of purpose and employed a quasi-experimental design with a pretest–posttest format, including a follow-up phase and a control group. The statistical population consisted of all women victims of emotional abuse residing in Tehran in 2025 who had referred to counseling centers, psychological clinics, psychotherapy service centers, and support centers for victims of unhealthy relationships. The research sample was selected using purposive and convenience sampling methods. After announcements were made in the aforementioned centers, individuals who expressed willingness to participate and met the initial eligibility criteria were assessed. The inclusion criteria consisted of experiencing emotional abuse in intimate relationships based on clinical assessment or self-report, being between 20 and 45 years of age, absence of severe psychiatric disorders such as psychotic disorders, not using psychiatric medications with major dosage changes during the study period, and willingness and ability to regularly attend therapeutic sessions. Participants who were absent from

more than two therapy sessions or who withdrew their willingness to continue participation during the study were excluded. Ultimately, 30 eligible participants entered the study after completing informed consent forms and were randomly assigned through simple randomization into an experimental group ($n = 15$) and a control group ($n = 15$). The experimental group received schema therapy intervention during ten weekly 60-minute sessions, whereas the control group received no intervention during the same period. Data collection was conducted at three stages, including pretest, posttest, and follow-up assessments for both groups.

2.2. Measures

The Intolerance of Uncertainty Scale was developed by Michel J. Dugas and colleagues and later revised by R. Nicholas Carleton et al. in 2007. The scale consists of 12 items designed to assess individuals' reactions to ambiguous situations, uncertainty-related consequences, and perceptions of future control. Items are scored on a 5-point Likert scale ranging from 1 (not at all characteristic of me) to 5 (entirely characteristic of me). The instrument measures two dimensions, including prospective anxiety related to uncertainty and inhibitory anxiety that interferes with action. Carleton et al. (2007) reported Cronbach's alpha coefficients of .85 for each subscale and .91 for the total scale in a student sample. In the psychometric evaluation of the Persian version among Iranian participants, Cronbach's alpha coefficients of .81 and .84 were reported for the respective subscales, while the total scale demonstrated an internal consistency coefficient of .98. Construct, convergent, and discriminant validity were confirmed through correlations with anxiety, negative affect, psychological distress, positive affect, and psychological well-being measures, and confirmatory factor analysis supported the two-factor structure of the scale.

Rejection sensitivity was assessed using the Rejection Sensitivity Questionnaire developed by Geraldine Downey and Scott I. Feldman in 1996. The questionnaire contains 18 hypothetical interpersonal situations in which respondents evaluate the likelihood of receiving acceptance or rejection from others and report their level of anxiety or concern regarding the outcome. Responses are rated on a 6-point Likert scale. The total score is calculated by reversing the expectancy ratings, multiplying them by the anxiety ratings for each situation, and averaging the obtained scores across all scenarios. Downey and Feldman (1996) reported a

Cronbach's alpha coefficient of .81 for the instrument and identified a single-factor structure explaining 27% of the total variance. Psychometric evaluation of the Persian version indicated a two-factor structure, including expectation of response and concern about rejection, accounting for 28.28% of the total variance. The Persian version also demonstrated acceptable internal consistency with a Cronbach's alpha coefficient of .84.

Self-critical rumination was measured using the Self-Critical Rumination Scale developed by Laura M. Smart et al. in 2016. This instrument assesses repetitive and maladaptive rumination processes associated with self-critical thoughts and contains 10 items rated on a 4-point Likert scale ranging from 1 (not at all) to 4 (very much). Total scores range from 10 to 40, with higher scores indicating greater levels of self-critical rumination. Exploratory factor analysis conducted by Smart et al. (2016) demonstrated that all items loaded onto a single factor explaining 58.41% of the total variance. The scale exhibited excellent internal consistency with a Cronbach's alpha coefficient of .92 and a two-week test-retest reliability coefficient of .86. In the Iranian validation study conducted by Shahian et al. (2024), exploratory factor analysis confirmed a single-factor structure explaining 55% of the total variance. Evidence for convergent and discriminant validity was supported through positive correlations with depression, anxiety, and stress, and a negative correlation with self-compassion. The Persian version also demonstrated satisfactory reliability with a two-week test-retest coefficient of .73 and a Cronbach's alpha coefficient of .90.

2.3. Intervention

The intervention protocol of the present study was designed and implemented based on the principles of schema therapy developed by Jeffrey E. Young. The experimental group participated in ten weekly group sessions, each lasting 60 minutes. The initial sessions focused on establishing a therapeutic alliance, introducing participants to one another, presenting the general framework of schema therapy, and explaining the concept of early maladaptive schemas and their role in emotional and interpersonal difficulties. Participants were educated regarding core emotional needs, developmental origins of schemas, and different schema domains, with particular emphasis on schemas associated with rejection, mistrust, emotional deprivation, defectiveness, and shame. The relationship between these

schemas and experiences of emotional abuse, rejection sensitivity, intolerance of uncertainty, and self-critical rumination was also discussed. During the middle sessions, schema modes and maladaptive coping styles, including surrender, avoidance, and overcompensation, were introduced, and participants learned strategies for identifying and cognitively evaluating activated schemas. The final sessions emphasized schema modification through cognitive and experiential techniques such as cognitive restructuring, role-playing, emotional exercises, and behavioral practice. Participants were encouraged to apply the acquired skills in real-life situations to strengthen the healthy adult mode and reduce maladaptive cognitive-emotional patterns. The final session focused on reviewing therapeutic progress, consolidating learned skills, identifying potential barriers to maintaining change, and providing strategies for sustaining cognitive and emotional improvements over time.

2.4. Data Analysis

The collected data were analyzed using IBM SPSS Statistics. Descriptive statistics, including means and standard deviations, were calculated for all study variables

across the assessment stages. To evaluate the effectiveness of schema therapy and examine the stability of treatment effects over time, repeated-measures analysis of variance (ANOVA) was employed. Prior to inferential analyses, statistical assumptions including normality of data distribution, homogeneity of variances, and sphericity were assessed. Statistical significance was considered at the .05 level. The analysis focused on determining between-group differences, within-group changes across pretest, posttest, and follow-up stages, and interaction effects between time and group membership.

3. Findings and Results

Examination of the demographic characteristics of the participants showed that the mean age of the women was 27.8 years, with an age range between 20 and 40 years. Regarding educational level, 26.7% of the participants held a high school diploma, 40% had an associate or bachelor’s degree, and 33.3% possessed a master’s degree or higher. Descriptive statistics related to intolerance of uncertainty, rejection sensitivity, and self-critical rumination across the pretest, posttest, and follow-up stages are presented in Table 1.

Table 1

Descriptive Statistics for the Research Variables Across Pretest, Posttest, and Follow-Up Stages

Dependent Variable	Group	Pretest Mean	SD	Skewness	Kurtosis	Posttest Mean	SD	Skewness	Kurtosis	Follow-Up Mean	SD	Skewness	Kurtosis
Self-Critical Rumination	Experimental	38.66	1.75	-1.29	-0.047	30.80	1.32	-0.740	0.206	30.82	1.20	0.556	-0.967
	Control	38.93	1.79	-1.07	-0.401	38.73	1.90	0.137	0.226	39.33	1.71	0.321	-0.697
Rejection Sensitivity	Experimental	65.46	4.27	0.598	0.432	55.33	3.86	-0.812	0.290	55.26	4.26	-0.729	0.367
	Control	66.40	3.08	-0.634	0.505	66.86	3.41	-0.397	0.489	67.53	3.44	-0.520	0.434
Intolerance of Uncertainty	Experimental	42.73	2.18	1.06	-0.168	35.00	1.64	1.63	-0.553	34.20	2.07	0.283	0.049
	Control	41.93	2.01	-0.427	0.587	42.13	1.72	0.819	0.437	41.66	2.02	-0.840	-0.130

Examination of the descriptive indices demonstrated that the mean scores of self-critical rumination in the experimental group decreased from pretest to posttest, declining from 38.66 to 30.80, and this improvement remained stable during the follow-up stage (30.82). The skewness and kurtosis values across all three stages were

within acceptable ranges, indicating normal distribution of the data. In contrast, the control group did not experience meaningful changes in self-critical rumination, and the mean scores remained relatively stable across the three stages. Regarding rejection sensitivity, the experimental group showed a substantial reduction following the intervention,

with mean scores decreasing from 65.46 at pretest to 55.33 at posttest, and this reduction was maintained at follow-up (55.26). In the control group, changes were negligible and non-significant, and the means remained close to baseline values throughout the study. A similar pattern was observed for intolerance of uncertainty, as the experimental group demonstrated a notable decline in scores following the intervention, with mean values decreasing from 42.73 at pretest to 35.00 at posttest, and the reduction remained stable at follow-up (34.20). Conversely, the control group exhibited minimal and non-significant changes across all stages. Overall, the pattern of mean changes across the principal study variables indicates that the intervention was effective in reducing intolerance of uncertainty, rejection sensitivity, and self-critical rumination in the experimental group, whereas the control group showed no meaningful changes.

Prior to conducting repeated-measures analysis of variance to examine changes in intolerance of uncertainty, rejection sensitivity, and self-critical rumination across the pretest, posttest, and follow-up stages, all statistical assumptions associated with this analysis were evaluated. To assess normality, the Shapiro–Wilk test was conducted separately for each variable at each time point. All results were non-significant ($p > .05$), indicating normal distribution of the scores for all three variables. In addition, scatterplots

were examined to evaluate the linearity of relationships among repeated measurements, and the observed patterns demonstrated linear and orderly trends, confirming the assumption of linearity. Levene’s test was used to assess homogeneity of error variances across time points, and the results were non-significant for all variables ($p > .05$), supporting the assumption of homogeneity of variances and justifying the use of parametric analyses. Furthermore, Box’s M test was conducted to evaluate homogeneity of covariance matrices, and the obtained significance levels were greater than .05 for all variables, confirming equality of covariance matrices. To examine homogeneity of regression slopes, the interaction effect of group \times pretest was tested, and non-significant results ($p > .05$) confirmed this assumption for all three variables. Finally, Mauchly’s test of sphericity was conducted for intolerance of uncertainty, rejection sensitivity, and self-critical rumination, and all significance values exceeded .05, indicating that the assumption of sphericity was satisfied and that no corrections such as Greenhouse–Geisser or Huynh–Feldt adjustments were necessary. Based on these findings, all assumptions required for repeated-measures ANOVA were met, allowing for statistically valid analyses of changes in intolerance of uncertainty, rejection sensitivity, and self-critical rumination across the three measurement stages.

Table 2

Repeated-Measures Analysis of Variance for Intolerance of Uncertainty, Rejection Sensitivity, and Self-Critical Rumination

Variable	Source	SS	df	MS	F	Sig.	Effect Size	Statistical Power
Intolerance of Uncertainty	Within-Group	339.489	2	169.744	115.860	.001	.805	1.00
	Between-Group	476.100	1	476.100	56.657	.001	.669	1.00
	Group \times Time	328.467	2	164.233	112.099	.001	.800	1.00
Rejection Sensitivity	Within-Group	440.022	2	220.011	91.069	.001	.765	1.00
	Between-Group	1529.344	1	1529.344	40.869	.001	.593	1.00
	Group \times Time	603.356	2	301.678	124.873	.001	.817	1.00
Self-Critical Rumination	Within-Group	302.956	2	151.478	156.061	.001	.848	1.00
	Between-Group	700.011	1	700.011	114.637	.001	.804	1.00
	Group \times Time	318.689	2	159.344	164.165	.001	.854	1.00

The results of the repeated-measures ANOVA demonstrated that all three variables, including intolerance of uncertainty, rejection sensitivity, and self-critical rumination, underwent significant changes as a result of the intervention. The within-group effects for all variables were significant at the .001 level, with large effect sizes ranging from .76 to .84, indicating that participants’ scores changed substantially across the pretest, posttest, and follow-up stages. In addition, the between-group effects were

significant for all variables ($p = .001$), suggesting meaningful differences between the experimental and control groups in the overall levels of the three variables. Furthermore, the interaction effect of group \times time was significant for all variables, indicating that the pattern of change over time differed according to group membership. The large effect sizes (.80 to .85) and statistical power values equal to 1.00 across all analyses indicate that the findings

possessed high statistical strength and that the observed effects were practically robust and reliable.

Table 3

Bonferroni Post Hoc Test for Comparing Mean Changes from Pretest to Follow-Up in Intolerance of Uncertainty, Rejection Sensitivity, and Self-Critical Rumination

Variable	Comparison Groups	Mean Difference	Standard Error	Significance Level
Intolerance of Uncertainty	Pretest–Posttest	3.76	0.344	.001
	Pretest–Follow-Up	4.40	0.366	.001
	Posttest–Follow-Up	0.633	0.202	.012
Rejection Sensitivity	Pretest–Posttest	4.83	0.465	.001
	Pretest–Follow-Up	4.54	0.476	.001
	Posttest–Follow-Up	-0.300	0.202	.446
Self-Critical Rumination	Pretest–Posttest	4.033	0.281	.001
	Pretest–Follow-Up	3.73	0.275	.001
	Posttest–Follow-Up	-0.300	0.200	.434

The results of the Bonferroni post hoc test demonstrated that the intervention produced significant reductions in intolerance of uncertainty, rejection sensitivity, and self-critical rumination from pretest to posttest and from pretest to follow-up ($p = .001$). These findings indicate the strong effectiveness of the intervention in improving all three variables from the implementation stage through the follow-up period. Regarding intolerance of uncertainty, a significant difference was also observed between posttest and follow-up stages ($p = .012$), suggesting that reductions in this variable continued even after the intervention had ended. In contrast, for rejection sensitivity and self-critical rumination, the differences between posttest and follow-up were non-significant, indicating that after the initial reductions achieved during the intervention period, the improvements in these variables remained stable during follow-up. Overall, the findings suggest that the intervention resulted in substantial and enduring improvements in all three variables, with the continued reduction after treatment observed only for intolerance of uncertainty.

4. Discussion

The present study aimed to investigate the effectiveness of schema therapy on intolerance of uncertainty, rejection sensitivity, and self-critical rumination among women victims of emotional abuse. The findings demonstrated that schema therapy significantly reduced all three variables in the experimental group compared with the control group, and these improvements remained stable during the follow-up stage. The repeated-measures analysis further showed significant interaction effects between group and time,

indicating that the observed changes were attributable to the intervention rather than to the passage of time alone. The large effect sizes and high statistical power also suggest that schema therapy exerted a strong and clinically meaningful impact on the cognitive-emotional vulnerabilities of women who had experienced emotional abuse.

One of the principal findings of the study was the significant reduction in intolerance of uncertainty following schema therapy intervention. This finding is theoretically consistent with schema therapy models proposing that early maladaptive schemas create enduring perceptions of danger, unpredictability, helplessness, and emotional insecurity (Young & Brown, 2019). Women who experience emotional abuse are repeatedly exposed to unstable interpersonal environments characterized by criticism, emotional withdrawal, manipulation, and inconsistent affection. Such experiences can strengthen schemas related to mistrust, abandonment, vulnerability to harm, and emotional deprivation, all of which may increase intolerance of uncertain and ambiguous situations. Schema therapy appears to reduce this vulnerability by helping participants identify maladaptive schemas, challenge distorted beliefs regarding danger and unpredictability, and develop healthier emotional and cognitive responses to uncertainty.

The present findings are aligned with contemporary conceptualizations of intolerance of uncertainty as a transdiagnostic process associated with anxiety, worry, and emotional dysregulation (Dugas et al., 2026). According to Dugas et al., individuals high in intolerance of uncertainty tend to interpret ambiguous situations as threatening and uncontrollable, which results in excessive anticipatory worry and emotional distress. Emotional abuse victims may

become especially vulnerable to these processes because they often experience chronic unpredictability in intimate relationships. The reduction in intolerance of uncertainty observed in the current study suggests that schema therapy may alter the underlying schema-driven interpretations through which ambiguous interpersonal experiences are perceived as threatening. This interpretation is also consistent with findings reported by (Besharat et al., 2015), who demonstrated that intolerance of uncertainty is associated with maladaptive metacognitive beliefs and deficits in cognitive emotion regulation. Through cognitive restructuring, experiential exercises, and schema mode work, schema therapy may help participants reinterpret uncertainty in less catastrophic ways and improve emotional tolerance in ambiguous situations.

The current findings are also consistent with previous intervention studies involving women affected by relational trauma. For example, (Parham, 2023) reported that acceptance and commitment therapy and mindfulness-based cognitive therapy were effective in reducing intolerance of uncertainty among women affected by infidelity. Similarly, (Bell et al., 2025) found that intolerance of uncertainty was strongly associated with intimate partner violence experiences during periods of heightened social instability. These studies collectively suggest that uncertainty-related distress is a central feature of relational trauma and can be improved through psychological interventions targeting maladaptive cognitive-emotional processes. The present study extends previous research by demonstrating that schema therapy, specifically, can effectively reduce intolerance of uncertainty in women victims of emotional abuse and maintain these effects during follow-up.

Another important finding of the study was the significant reduction in rejection sensitivity following schema therapy intervention. This finding is consistent with the theoretical foundations of rejection sensitivity proposed by (Downey & Feldman, 1996), who conceptualized rejection sensitivity as the anxious expectation and heightened perception of rejection in interpersonal situations. Emotional abuse experiences often involve repeated criticism, humiliation, invalidation, emotional withdrawal, and threats of abandonment, all of which may intensify fears of rejection and negative relational expectations. Women exposed to these experiences may become hypervigilant to interpersonal cues and interpret even ambiguous social interactions as signs of rejection or disapproval. Schema therapy likely reduces rejection sensitivity by modifying maladaptive schemas related to abandonment, mistrust,

defectiveness, and emotional deprivation while simultaneously strengthening the healthy adult mode and improving emotional regulation.

The findings of the present study are also congruent with the broader literature on rejection sensitivity and intimate relationships. Meta-analytic evidence has demonstrated that rejection sensitivity is strongly associated with relationship dissatisfaction, insecurity, emotional reactivity, and maladaptive interpersonal behaviors (Mishra & Allen, 2023). Moreover, actor-partner effect studies have shown that rejection sensitivity negatively affects both individuals and their romantic partners, highlighting the interpersonal consequences of rejection-related cognitive vulnerabilities (Mishra et al., 2024). Recent evidence also suggests that rejection sensitivity modulates emotional responses to perceived negative interactions in romantic relationships (Richter et al., 2024). The present study supports these findings by indicating that women victims of emotional abuse may experience elevated rejection sensitivity because abusive relational contexts repeatedly reinforce expectations of rejection, criticism, and emotional abandonment.

The current results are further supported by Iranian research emphasizing the relational and emotional significance of rejection sensitivity. (Abedini et al., 2025) demonstrated that rejection sensitivity contributes to attitudes toward infidelity in conflicted couples, while (Rasouli et al., 2024) showed that rejection sensitivity mediates associations between maladaptive personality traits and covert relational aggression in women. These findings suggest that rejection sensitivity influences a wide range of interpersonal and emotional outcomes. Furthermore, (Farmanbar et al., 2023) reported that schema therapy reduced rejection sensitivity in patients with borderline personality disorder, which is particularly important because borderline pathology is strongly associated with fears of abandonment and unstable interpersonal relationships. The current study extends this line of evidence to women victims of emotional abuse and indicates that schema-focused interventions can effectively reduce rejection-related vulnerability in trauma-exposed populations.

The findings regarding self-critical rumination also deserve careful attention. The results demonstrated that schema therapy significantly reduced self-critical rumination, and these improvements remained stable during follow-up. Self-critical rumination is characterized by repetitive and harsh self-focused thinking related to personal inadequacy, shame, and self-blame (Smart et al., 2016). Women victims of emotional abuse are especially vulnerable

to such cognitive processes because emotionally abusive relationships frequently involve blame, degradation, gaslighting, humiliation, and attacks on self-worth. Over time, these external criticisms may become internalized, resulting in chronic self-judgment and repetitive negative self-evaluation. Schema therapy likely reduces self-critical rumination by helping participants identify punitive and demanding internalized modes, challenge maladaptive self-beliefs, and cultivate self-compassionate and adaptive modes of self-regulation.

The observed reduction in self-critical rumination is supported by prior empirical findings. (Martinez-Sanchis et al., 2021) demonstrated that self-critical rumination mediates the relationship between emotion regulation difficulties and psychopathology, indicating that repetitive self-critical thinking functions as a mechanism maintaining emotional distress. Likewise, (Fearn et al., 2022) found that self-critical rumination and maladaptive metacognitive beliefs mediate the relationship between perfectionism and self-esteem. These findings imply that interventions reducing maladaptive self-criticism may improve broader emotional functioning and psychological well-being. The present study suggests that schema therapy effectively addresses these maladaptive cognitive patterns by restructuring dysfunctional schemas and reducing the emotional intensity attached to self-critical thoughts.

The findings are also consistent with trauma-related research emphasizing the role of self-criticism among victims of interpersonal violence. (Crapolicchio et al., 2021) reported that self-criticism and low self-acceptance were associated with posttraumatic stress symptoms in women victims of intimate partner violence, whereas self-efficacy served as a protective factor. Similarly, (Alipour Parvaj et al., 2025) demonstrated that self-critical rumination mediates the relationship between victimization experiences and psychological distress in adolescents. These findings suggest that victimization experiences may become psychologically harmful not only because of the external abuse itself but also because of the internalized cognitive-emotional processes that emerge afterward. By targeting maladaptive schemas and self-critical modes, schema therapy appears capable of interrupting these repetitive negative cycles and promoting healthier self-perceptions.

The persistence of treatment effects during follow-up is another noteworthy aspect of the findings. Sustained improvements suggest that schema therapy not only produces temporary symptom reduction but also facilitates deeper cognitive-emotional restructuring. Unlike

interventions focused solely on symptom management, schema therapy emphasizes enduring changes in schemas, coping styles, and emotional modes (Young & Brown, 2019). Through repeated experiential and cognitive exercises, participants gradually develop more adaptive interpretations of themselves and their relationships, which may explain why the improvements remained stable after treatment completion. The continued reduction of intolerance of uncertainty during the follow-up stage may indicate that participants continued applying newly acquired cognitive-emotional strategies in daily life, resulting in ongoing improvement even after the formal intervention ended.

5. Conclusion

The findings of the present study are meaningful within the broader context of women's mental health and domestic violence interventions. Research has emphasized that women exposed to intimate partner violence often experience severe psychosocial consequences, including emotional dysregulation, depressive symptoms, impaired future orientation, and trauma-related distress (Cabras et al., 2020; Wessells & Kostelny, 2022). At the same time, barriers in screening and intervention services may prevent women from receiving adequate psychological support (Kirk & Bezzant, 2020). Studies on domestic violence screening in healthcare settings have highlighted the importance of early psychological intervention and structured support systems (Duchesne et al., 2021). The current findings contribute to this literature by providing evidence that schema therapy can serve as an effective psychological intervention for women victims of emotional abuse, particularly in addressing deeper cognitive-emotional vulnerabilities that frequently persist after abusive experiences.

6. Limitations & Suggestions

Although the findings of the study are promising, several limitations should be acknowledged. First, the sample size was relatively small, which may limit the generalizability of the findings to broader populations of women victims of emotional abuse. Second, the participants were recruited from counseling and psychological service centers in Tehran, and therefore the findings may not fully represent women from rural regions or different sociocultural backgrounds. Third, all variables were assessed using self-report questionnaires, which may be influenced by response

biases such as social desirability or inaccurate self-perception. In addition, the study did not compare schema therapy with other active therapeutic approaches, making it difficult to determine whether schema therapy is superior to other evidence-based interventions. Finally, the follow-up period was relatively limited, and longer-term evaluations would provide a clearer understanding of the durability of treatment effects.

Future research is recommended to examine the effectiveness of schema therapy in larger and more diverse samples of women exposed to emotional abuse and other forms of intimate partner violence. Comparative studies investigating schema therapy alongside cognitive-behavioral therapy, acceptance and commitment therapy, compassion-focused therapy, and trauma-focused interventions would help clarify the relative strengths of different therapeutic models. Researchers are also encouraged to investigate potential mediating mechanisms, such as changes in maladaptive schemas, emotion regulation, self-compassion, or attachment patterns, in order to better understand how schema therapy produces psychological improvement. In addition, longitudinal studies with extended follow-up periods could evaluate the long-term stability of therapeutic gains and their impact on future relational functioning and psychological resilience.

From a practical perspective, the findings of the present study suggest that schema therapy may be effectively implemented in counseling centers, psychotherapy clinics, women's support organizations, and community mental health services for women victims of emotional abuse. Mental health professionals working with trauma-exposed women may benefit from incorporating schema-focused conceptualization, cognitive restructuring, experiential techniques, and mode-based interventions into therapeutic practice. Training programs for psychologists, counselors, and social workers could also include schema therapy principles to improve professionals' ability to address deep-rooted emotional vulnerabilities associated with emotional abuse. Furthermore, integrating schema-based interventions into domestic violence support services may contribute to long-term psychological recovery, improved interpersonal functioning, and greater emotional resilience among women affected by abusive relationships.

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Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

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

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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Authors' Contributions

All authors have equally contributed to the research process and the development of the manuscript.

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