

Comparison of the Effectiveness of Schema Therapy and Dialectical Behavior Therapy on Interpersonal Relationships in Patients with Borderline Personality Disorder

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ABSTRACT

The present study aimed to compare the effectiveness of schema therapy and dialectical behavior therapy on interpersonal relationships in patients with borderline personality disorder. From a methodological perspective, this research employed a quasi-experimental design with a pretest–posttest control group. The statistical population included all individuals who, with a diagnosis or symptoms of borderline personality disorder, had referred to psychiatric centers, psychological service providers, and clinics in the city of Tehran during the years 2024 to 2025. The study sample consisted of 45 patients selected through purposive nonrandom sampling and subsequently randomly assigned to three groups of 15 participants each (two experimental groups and one control group). The first experimental group received group schema therapy in 16 sessions of 60 minutes each, while the second experimental group underwent group dialectical behavior therapy in 16 sessions of 60 minutes each. The control group did not receive any therapeutic intervention during the course of the study. Data collection instruments included the Structured Clinical Interview for Personality Disorders, the Borderline Personality Questionnaire, and the Interpersonal Relationships Questionnaire developed by Mahmoudi et al. (2016). The collected data were analyzed using repeated-measures analysis of variance. The results indicated a significant difference between the effectiveness of the two therapeutic approaches across the components of interpersonal relationships. Accordingly, it can be concluded that schema therapy, compared to dialectical behavior therapy, demonstrates greater effectiveness in improving interpersonal relationships in patients with borderline personality disorder and can be considered an efficient intervention for enhancing interpersonal functioning in this population.

Keywords: schema therapy, dialectical behavior therapy, interpersonal relationships, borderline personality disorder.

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Introduction

Borderline Personality Disorder (BPD) is a severe and complex mental health condition characterized by pervasive instability in affect regulation, self-image, interpersonal relationships, and impulse control. According to the Diagnostic and Statistical Manual of Mental Disorders (5th ed.), BPD is defined by a persistent pattern of emotional dysregulation, intense and unstable relationships, identity disturbance, and

marked impulsivity that begins by early adulthood and is present across contexts (1). Epidemiological studies estimate that BPD affects approximately 1–2% of the general population, yet it accounts for a disproportionately high rate of mental health service utilization, self-harm behaviors, and psychiatric hospitalizations, underscoring its substantial individual and societal burden (2). Beyond symptom severity, BPD is associated with chronic functional impairment, particularly in interpersonal domains, which remains one of the most treatment-resistant aspects of the disorder.

Interpersonal dysfunction is widely regarded as a core and defining feature of BPD. Individuals with BPD often experience intense fears of abandonment, heightened sensitivity to perceived rejection, oscillations between idealization and devaluation of others, and difficulties maintaining stable and reciprocal relationships (3). Meta-analytic evidence indicates that interpersonal dysfunction in personality disorders—and especially in BPD—is both pervasive and profound, encompassing deficits in attachment security, empathy regulation, conflict resolution, and social problem-solving (4). These interpersonal difficulties are not merely secondary consequences of mood instability; rather, they are deeply embedded in the cognitive, emotional, and behavioral organization of the disorder and play a central role in the onset, maintenance, and recurrence of BPD symptoms.

From a developmental and psychodynamic perspective, interpersonal dysfunction in BPD has been linked to early adverse experiences, including inconsistent caregiving, emotional invalidation, and trauma, which disrupt the formation of stable self-representations and internalized relational schemas (5). Such experiences contribute to fragmented self-concepts and maladaptive expectations of others, leading individuals with BPD to misinterpret social cues, overreact emotionally to interpersonal stressors, and engage in maladaptive behaviors to regulate distress or preserve attachment bonds (6). Cognitive research further suggests that deficits in executive functioning, emotion-related cognition, and social information processing exacerbate interpersonal instability and impulsive relational behaviors in adults with BPD (7).

Gender-related patterns add further complexity to interpersonal functioning in BPD. Although prevalence rates across genders are increasingly recognized as comparable, clinical presentations often differ, particularly in relational styles, emotional expression, and help-seeking behaviors (8). These differences may influence both treatment engagement and therapeutic outcomes, highlighting the importance of interventions that explicitly target interpersonal processes and relational patterns rather than focusing solely on symptom reduction.

Historically, treatment of BPD posed significant challenges, with pessimism regarding prognosis and limited empirical support for effective interventions. Pharmacotherapy has shown only modest benefits, primarily targeting comorbid symptoms such as mood instability or anxiety, rather than the core interpersonal pathology of BPD (9). Consequently, contemporary clinical guidelines emphasize structured psychotherapeutic approaches as the first-line treatment for BPD, particularly those grounded in integrative cognitive-behavioral and experiential frameworks.

Dialectical Behavior Therapy (DBT), originally developed by Linehan, represents one of the most extensively researched and widely implemented treatments for BPD. DBT conceptualizes BPD as a disorder of emotion dysregulation arising from the interaction between biological vulnerability and an invalidating environment, and it integrates cognitive-behavioral techniques with mindfulness and acceptance-based strategies (10). Empirical evidence consistently supports the efficacy of DBT in reducing suicidal behaviors,

self-harm, emotional dysregulation, and psychiatric hospitalization (11). Recent randomized controlled trials further demonstrate the superiority of DBT over pharmacological approaches, such as serotonin reuptake inhibitors, in reducing suicidal behaviors among individuals with BPD (12).

Systematic reviews and meta-analyses confirm that DBT yields moderate to large effects on core BPD symptoms; however, findings regarding its impact on broader interpersonal functioning are more nuanced. While DBT includes a specific interpersonal effectiveness skills module, improvements in relational stability and quality appear to be variable and may depend on treatment duration, patient characteristics, and comorbid conditions (13). Moreover, studies involving special populations, such as individuals with comorbid post-traumatic stress disorder, suggest that DBT can positively influence interpersonal trajectories, although residual relational difficulties often persist (14). These findings raise important questions about whether DBT alone sufficiently addresses the deep-seated relational schemas and attachment-related disturbances characteristic of BPD.

Schema Therapy (ST) has emerged as a promising alternative and complementary approach for the treatment of BPD, particularly with respect to interpersonal and self-related dysfunctions. Rooted in an integrative model that combines cognitive-behavioral, attachment, psychodynamic, and experiential techniques, ST emphasizes the role of early maladaptive schemas and schema modes in shaping enduring patterns of emotion, cognition, and interpersonal behavior (15). In the context of BPD, schema therapy focuses on identifying and modifying maladaptive modes such as the Abandoned Child, Angry/Impulsive Child, Detached Protector, and Punitive Parent, which are activated in interpersonal situations and drive relational instability.

Robust empirical evidence supports the effectiveness of schema therapy for BPD. Randomized clinical trials have demonstrated that both individual and group-based schema therapy lead to significant reductions in BPD symptom severity, improved emotional regulation, and enhanced interpersonal functioning (15). Notably, schema therapy places strong emphasis on the therapeutic relationship through the principle of limited reparenting, which directly targets unmet emotional needs and dysfunctional attachment patterns that underlie interpersonal problems. This relational focus distinguishes schema therapy from more skills-based approaches and may account for its particular effectiveness in addressing chronic interpersonal difficulties.

Recent research trends further highlight the growing interest in schema therapy as a treatment of choice for complex and treatment-resistant presentations. Delphi consensus studies have identified the need for more comparative and mechanism-focused research on schema therapy, particularly regarding its impact on interpersonal processes and long-term relational outcomes (16). Innovations such as online and group-based schema therapy formats have also shown feasibility and acceptability, expanding access while maintaining therapeutic integrity for individuals with BPD (17). Additionally, clinical case series and integrative reviews suggest that schema therapy may be particularly beneficial when standard treatments are insufficient, especially in populations with severe interpersonal pathology or comorbid conditions (18).

Despite the substantial evidence base supporting both DBT and schema therapy, direct comparative studies focusing specifically on interpersonal outcomes remain limited. Much of the existing literature prioritizes symptom reduction, self-harm, or diagnostic remission, while interpersonal functioning—arguably the most impairing and enduring aspect of BPD—receives comparatively less systematic attention

(3). Furthermore, although both therapies acknowledge the centrality of relationships in BPD, they differ markedly in their theoretical assumptions and mechanisms of change. DBT emphasizes behavioral skills acquisition, contingency management, and dialectical balance between acceptance and change, whereas schema therapy targets deep cognitive-affective structures and relational schemas formed through early attachment experiences.

Understanding whether these theoretical differences translate into differential effectiveness in improving interpersonal relationships has important clinical and theoretical implications. From a clinical standpoint, identifying the intervention that more effectively enhances interpersonal functioning can inform personalized treatment planning, optimize therapeutic outcomes, and reduce the long-term burden associated with relational instability. From a theoretical perspective, comparative findings can contribute to refining models of BPD by clarifying the mechanisms through which interpersonal change occurs and the relative importance of skills-based versus schema-focused interventions (4).

Moreover, cultural and contextual factors underscore the need for continued empirical evaluation of psychotherapeutic approaches across diverse clinical settings. Variations in family structures, relational norms, and help-seeking behaviors may influence both the manifestation of interpersonal problems and responsiveness to treatment, reinforcing the importance of context-sensitive research designs and outcome measures (8). Comparative effectiveness studies conducted in real-world clinical environments thus provide valuable evidence to bridge the gap between controlled trials and routine practice.

In light of these considerations, the present study was designed to address a critical gap in the literature by systematically comparing the effectiveness of schema therapy and dialectical behavior therapy on interpersonal relationships in patients with borderline personality disorder, with the aim of determining which therapeutic approach yields greater improvements in interpersonal functioning.

Methods and Materials

Study Design and Participants

The method of the present study was quasi-experimental. The research design was a quasi-experimental pretest–posttest design with a control group and a 3-month follow-up, in which two experimental groups and one control group were compared across two stages of pretest and posttest. In addition, after being selected through purposive nonrandom sampling, participants were assigned to two experimental groups and one control group. All groups completed the pretest once prior to the implementation of the intervention, and following the completion of treatment in the experimental groups, the posttest was administered to both experimental groups. Three months later, a follow-up session was conducted for each participant to complete the questionnaires again. The statistical population of this study included all individuals who, with a diagnosis or symptoms of borderline personality disorder, had referred to psychiatric centers, psychological service providers, and clinics in the city of Tehran during the years 2024 to 2025. Considering the practical limitations of implementing the intervention and the scope of the design, the sample size was determined to be 45 participants. Participant selection was initially conducted using purposive nonrandom sampling. To identify the initial pool, a total of 200 questionnaires were distributed in the aforementioned centers among individuals who expressed willingness to participate. From these, individuals who simultaneously met the required diagnostic criteria and achieved the minimum cutoff score

on the Borderline Personality Inventory (BPI) were selected. Subsequently, 45 individuals were chosen after confirmation by a psychologist and enrolled in the study. Eligible participants completed an informed consent form after receiving a full explanation of the study. Thereafter, participants meeting the inclusion criteria were selected through purposive nonrandom sampling and randomly assigned to three groups: Experimental Group 1 (n = 15; dialectical behavior therapy), Experimental Group 2 (n = 15; schema therapy), and the control group (n = 15; no intervention). In the first experimental group, the dialectical behavior therapy protocol was implemented, whereas the second experimental group received schema therapy intervention. Members of the control group did not receive any intervention during the study period. The therapeutic programs in both experimental groups were implemented by a therapist who was a doctoral student in psychology. According to the perspectives of research methodology experts, in experimental and quasi-experimental designs, a sample size of approximately 15 participants per group provides sufficient power for data analysis. Inclusion criteria were: meeting the diagnostic criteria for borderline personality disorder based on DSM-5-TR as assessed by a psychiatrist and confirmed through the Structured Clinical Interview for Personality Disorders, achieving the required cutoff score for the severity of borderline personality disorder on the Borderline Personality Inventory (BPI; Leichsenring, 1999), age range of 20 to 30 years, no prior psychological treatment aimed at treating borderline personality disorder, willingness to participate in the study, minimum educational level of middle school, and obtaining the minimum required scores on the study measures based on questionnaire cutoffs. Exclusion criteria included: being outside the specified age or educational range, presence of neurological disorders, intellectual disability, primary psychotic disorders, receiving other forms of treatment during the study, and absence from more than two therapy sessions.

Data Collection

The Structured Clinical Interview for Personality Disorders is a semi-structured diagnostic interview developed by First et al. for the diagnosis of personality disorders in DSM-5. The SCID-5-PD covers all 10 personality disorders listed in DSM-5 as well as other specified disorders. One of the features of the SCID-5-PD is that it includes a self-report personality questionnaire as a screening tool. This questionnaire consists of 106 items and can be administered in less than 20 minutes. The minimum educational level required for responding is completion of at least eight years of schooling. Based on the items to which the patient responds affirmatively, the examiner directs the interview accordingly. Although specific reliability or validity information for the SCID-5-PD is not available, several studies have examined the reliability of its predecessor, the SCID-II. Lobbetael et al. (2010) reported kappa coefficients for the SCID-II ranging from .69 for paranoid personality disorder to .95 for borderline personality disorder, with an overall kappa of .78. Sharifi et al. (2006) reported acceptable reliability for diagnoses obtained using the Persian version of the SCID and satisfactory feasibility of its administration.

The Borderline Personality Inventory (BPI; Leichsenring, 1999) was developed in 1999 to assess borderline personality traits in clinical and nonclinical samples. This questionnaire consists of 51 items based on Kernberg's (1967) concept of borderline personality organization and the diagnostic criteria of DSM-IV. The scale includes factors assessing identity diffusion, primitive defense mechanisms, impaired reality testing, and fear of intimacy, and responses are provided in a yes/no format. In Item 13, option "A"

is scored as 1 and option “B” as 0. If an individual’s score on 20 specific items (the cutoff items) exceeds 10, there is a high probability of borderline personality disorder. If the total score on these 20 items is below 10, the probability of borderline personality disorder is considered very low. Leichsenring (1999) demonstrated satisfactory internal consistency and test–retest reliability for this instrument, with Cronbach’s alpha coefficients for its components ranging from .68 to .91 and test–retest correlations between .73 and .89. In a study by Mohammadzadeh and Rezaei (2011), the validity and reliability of this questionnaire were examined. Concurrent validity was reported as .70, correlations between subscales and the total scale and among subscales ranged from .71 to .80, and three forms of reliability—test–retest, split-half, and internal consistency—were reported with coefficients of .80, .83, and .85, respectively.

The Interpersonal Relationships Questionnaire developed by Mahmoudi et al. (2016), modeled after the Fetrow Questionnaire (2000), was used to assess interpersonal relationships. This questionnaire comprises six dimensions: empathy and intimacy, assertiveness, communication skills, conflict resolution, relationship maintenance, and listening skills, and includes 56 items. Responses are rated on a 5-point Likert scale. The total score of the questionnaire is obtained by summing the scores of all items. Cronbach’s alpha was used to assess internal consistency. The overall reliability coefficient of the questionnaire was .82, and Cronbach’s alpha coefficients for the components were .90 for empathy and intimacy, .79 for assertiveness, .88 for communication skills, .83 for conflict resolution, .83 for relationship maintenance, and .68 for listening skills. The Kaiser–Meyer–Olkin (KMO) value obtained from exploratory factor analysis was .90, indicating an excellent level of sampling adequacy. In addition, Bartlett’s test of sphericity was significant at the .001 level. The six factors accounted for 45.26% of the total variance. In the study by Ansari et al. (2022), face and content validity of the questionnaire were first confirmed by 10 faculty members. Construct validity was also examined using factor analysis and was confirmed. Based on the analysis, Cronbach’s alpha and composite reliability (CR) values for all interpersonal relationship components were above .70, indicating adequate internal consistency and stability of the factor-analytic measurement model.

Interventions

The dialectical behavior therapy (DBT) protocol was implemented based on *Dialectical Behavior Therapy for Borderline Personality Disorder* by David H. Barlow (1942) across 16 sessions, held twice weekly, with 60 minutes per session. The protocol began with collaborative commitment to treatment, a comprehensive diagnostic interview, compilation of clinical history, and a formal behavioral analysis of high-priority target behaviors, followed by agreement on mutual expectations and orientation to the daily diary card and pretest completion. Early sessions introduced the dialectical and biosocial conceptualization of borderline personality disorder and framed DBT as a supportive, cognitive-behavioral, skills-based intervention emphasizing behavioral training, commitment strategies, and validation, including securing commitment to abstain from self-harm. Subsequent sessions involved ongoing diary card review and crisis management, clarification of treatment goals (e.g., reducing life-threatening behaviors, therapy-interfering behaviors, and quality-of-life-interfering behaviors; increasing behavioral skills; reducing post-stress distress; improving problem solving, self-respect, and capacity for sustained well-being), and the initiation of dialectical strategies to shift patients from polarized “either–or” positions to “both–and” perspectives (e.g., entering and using paradox, metaphor, extension, activating “wise mind,” reframing negatives to positives, and

“making lemonade from lemons”). Mid-treatment emphasized core acceptance and change strategies: validation procedures (e.g., accurate reflection, “reading between the lines,” validation via learning history/biological vulnerability, and validation of the current context/ normative functioning) and problem-solving methods (e.g., behavioral chain analysis, insight into recurrent patterns, psychoeducation; generating solution alternatives; orienting patients to therapeutic processes; and strengthening commitment). The protocol also balanced two therapist communication styles—reciprocal/relational strategies (e.g., empathic responsiveness, appropriate self-disclosure, warm engagement) and irreverent/bold strategies to disrupt maladaptive balance and elicit new perspectives—while delivering skills training through acquisition, strengthening, and generalization. Later sessions focused on reinforcement management (shaping target behaviors, extinction of problem behaviors, and cautious use of consequences consistent with proportionality and careful application), mindfulness skills (nonjudgmental observation of thoughts, emotions, and behaviors; present-moment attention via the five senses), distress tolerance (surviving crises without worsening them; reality acceptance for unchangeable conditions), emotion regulation (identifying and labeling emotions, mindfulness of current emotion, addressing barriers to change, increasing positive emotional events, and opposite-action behaviors), and interpersonal effectiveness (clarifying goals in conflict situations; making requests and saying “no”; maximizing goal attainment without damaging relationships or sacrificing self-respect), concluding with treatment summary and termination.

The schema therapy protocol was delivered based on *Schema Therapy for Borderline Personality Disorder* by Arntz et al. (2009) across 16 sessions, held twice weekly, with 60 minutes per session. The initial sessions included a comprehensive diagnostic interview to evaluate functioning and borderline personality disorder symptoms, establishment of general therapeutic rules, systematic collection and listing of presenting complaints, identification of emotion-triggering situations with empathic attunement, evaluation of the patient’s coping styles and their utility, and development of a secure, supportive therapeutic relationship using limited reparenting with firm boundaries, along with review of contraindications and completion of pretest measures. Subsequent sessions explored early relationships with parents/caregivers and salient developmental events linked to current problems, introduced the schema mode framework and the developmental roots of schemas, mapped the patient’s personal history to the emergence of modes, and explained the treatment rationale using the borderline personality disorder mode model, including how current difficulties relate to schemas/modes and how specific emotion–cognition–behavior patterns cluster within modes. Mid-treatment emphasized psychoeducation on the borderline mode model to account for rapid mood shifts and behavioral dyscontrol, crisis management when needed, and systematic mode-focused intervention, including naming and teaching modes, clarifying mode functions, explaining therapeutic procedures, and collaborative goal setting. Mode-specific interventions then targeted (a) the Detached Protector (building trust and safety for emotional experiencing and expression, analyzing childhood origins, experiential chair work to access emotions and examine functional tension in childhood, weighing pros/cons with patient and therapist, and assigning between-session sharing of emotions while addressing barriers), (b) the Abandoned/Rejected Child (soothing and supportive therapeutic stance with empathy, identifying healthier ways to meet needs, cultivating compassion toward the vulnerable child mode, imagery rescripting and historical role-play to normalize receiving support, practicing adaptive need fulfillment, clarifying

realistic standards of normality, relaxation and meditation practice, and barrier review), (c) the Angry/Impulsive Child (maintaining safety and therapist-set limits while allowing anger expression within boundaries, teaching appropriate assertiveness, imagery rescripting for past anger-evoking situations when anger awareness is limited, identifying and challenging irrational beliefs about anger/its expression, rehearsing expression of mild grievances and anger, and addressing obstacles), and (d) the Punitive Parent (protecting the patient given potential risks, ensuring accessibility during crises, historical role-play and imagery rescripting to confront the punitive mode, therapist's firm confrontation of the punitive parent, persuasive counterexamples to the critical parent's distortions, use of pie charts to contextualize single events within the broader phenomenon, "courtroom" techniques to appraise responsibility or reduce undue blame, teaching strategies to disengage from punitive self-talk, and barrier review). In the final phase, treatment consolidated the Healthy Adult mode by gradually shifting from a parent-child therapeutic dynamic to an adult-adult collaboration to promote self-directed functioning, replacing maladaptive schemas with healthier alternatives, reality-testing and validating cognitions that precipitate negative affect or impulsive behavior, calibrating emotional intensity to ensure alignment with adaptive action, emphasizing completion of end-stage homework, implementing behavioral pattern-breaking to prevent schema reactivation, using empathic confrontation to evaluate the advantages and disadvantages of recent changes, and practicing new behaviors through empty-chair or two-chair techniques before closure.

Data Analysis

Analysis of the collected data was conducted in two sections: descriptive statistics and inferential statistics. Descriptive indices included measures of central tendency (mean), measures of dispersion (standard deviation), and distribution indices (skewness and kurtosis). In the inferential statistics section, repeated-measures analysis of covariance and Bonferroni post hoc tests were applied at a significance level of $\alpha = .05$, using SPSS software version 24.

Findings and Results

The age range of participants in the three groups was between 18 and 30 years. Comparison of the frequency distribution of participants' age based on the nonparametric chi-square test indicated that there was no statistically significant difference among the age levels of participants across the three groups ($\chi^2(4) = 2.360, p = .642$). The educational levels of participants in the three groups ranged from upper secondary education (below diploma) to master's degree. Comparison of the frequency of educational levels based on the nonparametric chi-square test showed no statistically significant difference among the three groups in terms of educational attainment ($\chi^2(8) = 2.489, p = .681$). In the schema therapy group, 60% of participants were female and 40% were male; in the dialectical behavior therapy group, 53% were female and 47% were male; and in the control group, 47% were female and 53% were male. The chi-square test indicated no statistically significant difference among the three groups with respect to gender distribution ($\chi^2(2) = 0.536, p = .923$).

Table 1. Descriptive Statistics of Interpersonal Relationships at Pretest, Posttest, and Follow-Up Across the Three Groups

Group	Pretest Mean	Pretest SD	Posttest Mean	Posttest SD	Follow-Up Mean	Follow-Up SD
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Dialectical Behavior Therapy	42.10	13.91	18.10	13.90	57.50	20.71
Schema Therapy	35.70	93.87	77.80	13.85	95.50	13.69
Control	40.60	86.71	52.70	47.70	36.60	93.68

Table 2. Test of Linearity for the Dependent Variable (Interpersonal Relationships)

Source	Trend	Sum of Squares	df	Mean Square	F	Sig.
Interpersonal Relationships	Linear	1604.44	1	1604.44	99.58	.001
	Nonlinear	697.62	1	697.62	142.80	.001
Interpersonal Relationships × Group	Linear	1082.82	2	541.41	33.60	.001
	Nonlinear	382.54	2	191.27	39.15	.001
Error	Linear	676.73	42	16.11		
	Nonlinear	205.18	42	4.88		

The results presented in Table 2 indicate that the interpersonal relationship scores, regardless of group type, followed both a linear and a quadratic (nonlinear) trend at the posttest and follow-up stages. That is, following the experimental interventions, the level of interpersonal relationships in the experimental groups increased at the posttest stage and remained approximately stable at the follow-up stage.

Table 3. Results of Repeated-Measures Analysis of Variance (Within-Group and Between-Group Effects of Therapeutic Methods on Interpersonal Relationships)

Source of Variation	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Within-Subjects Effects						
Time	5581.61	2	2790.81	51.01	.001	.548
Time × Group	923.41	4	230.85	4.22	.004	.167
Error	4595.64	84	54.71			
Between-Subjects Effects						
Group	3904.19	2	1952.09	26.73	.001	.560
Error	3067.02	42	73.02			

As shown in Table 3, the significant F value for the time factor indicates that the interpersonal relationship scores of participants in the experimental groups changed (increased) significantly from pretest to posttest and follow-up ($p < .01$; $F(2, 84) = 51.01$), demonstrating the effectiveness of the therapeutic methods on interpersonal relationships. The partial eta squared value indicates that 54.8% of the variance (increase) in interpersonal relationship scores from pretest to posttest and follow-up was attributable to the effects of the therapeutic methods. The significant interaction between time and group suggests that, at the posttest and follow-up stages, the mean interpersonal relationship scores of the experimental groups were significantly higher than those of the control group ($p < .01$; $F = 4.22$). In addition, the significant main effect of group indicates that there were statistically significant differences among the three groups in interpersonal relationship scores at the posttest and follow-up stages ($p < .01$; $F(2, 42) = 26.73$). Therefore, the second hypothesis of the study was confirmed. The partial eta squared value shows that 56% of the variance in interpersonal relationship scores was attributable to the group factor.

Table 4. Pairwise Comparisons of Mean Interpersonal Relationship Scores by Type of Treatment

Comparison	Mean Difference (MD)	Standard Error	Sig.
Schema Therapy – Dialectical Behavior Therapy	5.09	1.80	.022

Schema Therapy – Control	13.07	1.80	.001
Dialectical Behavior Therapy – Control	7.98	1.80	.013

As shown in Table 4, the results of the Scheffé test indicate a statistically significant difference between the effectiveness of schema therapy and dialectical behavior therapy on interpersonal relationship scores ($p < .05$; MD = 5.09). Based on the means reported in Table 3, it can be concluded that schema therapy was more effective than dialectical behavior therapy in improving or increasing interpersonal relationships in patients with borderline personality disorder. Therefore, the second hypothesis regarding the significant difference between the effectiveness of schema therapy and dialectical behavior therapy in enhancing interpersonal relationships in patients with borderline personality disorder was confirmed. In addition, statistically significant differences were observed between the schema therapy group and the control group ($p < .01$), as well as between the dialectical behavior therapy group and the control group ($p < .05$), indicating the effectiveness of both schema therapy and dialectical behavior therapy in improving interpersonal relationships.

Table 5. Bonferroni Post Hoc Test Results for Comparing Means Across Assessment Stages

Variable	Stage Comparison	Mean Difference	Standard Error	Sig.	95% CI Lower	95% CI Upper
Interpersonal Relationships	Pretest – Posttest	-12.50	1.51	.001	-16.26	-8.72
	Pretest – Follow-Up	-14.56	1.49	.001	-18.27	-10.84
	Posttest – Follow-Up	-2.07	1.67	.666	-6.22	2.09

According to Table 5, the results of the Bonferroni post hoc test for comparing means across assessment stages for the interpersonal relationships variable indicate significant differences between the pretest and posttest stages ($p < .01$; MD = -12.50) and between the pretest and follow-up stages ($p < .01$; MD = -14.56). However, no statistically significant difference was observed between the posttest and follow-up stages ($p > .05$), indicating the stability of the results or the maintenance of changes from the posttest to the follow-up stage.

Discussion and Conclusion

The findings of the present study demonstrated that both schema therapy and dialectical behavior therapy led to significant improvements in interpersonal relationships among patients with borderline personality disorder from pretest to posttest, and that these gains were largely maintained at the three-month follow-up. This overall pattern confirms that structured, evidence-based psychotherapeutic interventions are effective in addressing one of the most central and debilitating features of borderline personality disorder, namely chronic interpersonal dysfunction. The significant main effect of time indicates that participation in either therapeutic program was associated with meaningful positive change in interpersonal functioning, which is consistent with the broader literature emphasizing psychotherapy as the treatment of choice for borderline personality disorder (1, 2). These results align with prior evidence showing that targeted psychological interventions can modify maladaptive relational patterns that are otherwise resistant to change through pharmacological approaches alone (9). The absence of a significant decline from posttest to

follow-up further suggests that the observed improvements were not merely short-term treatment effects but reflected relatively stable changes in interpersonal functioning.

Beyond these general treatment effects, the results revealed a significant interaction between time and group, indicating that the magnitude of improvement in interpersonal relationships differed across the experimental and control groups. Specifically, both treatment groups showed significantly higher interpersonal relationship scores at posttest and follow-up compared to the control group, confirming the effectiveness of both schema therapy and dialectical behavior therapy relative to no intervention. This finding is consistent with systematic reviews and meta-analytic studies demonstrating that structured psychotherapies for borderline personality disorder outperform treatment-as-usual or waitlist conditions across a range of clinical outcomes (11, 13). Importantly, the large effect sizes observed for both within-group and between-group comparisons underscore the clinical relevance of these interventions in improving relational functioning, which has been identified as a core domain of impairment in borderline personality disorder (4).

Crucially, the pairwise comparisons indicated that schema therapy produced significantly greater improvements in interpersonal relationships than dialectical behavior therapy. This finding directly addresses the central aim of the study and provides empirical support for the differential effectiveness of these two approaches with respect to interpersonal outcomes. While dialectical behavior therapy has consistently demonstrated efficacy in reducing self-harm, suicidal behaviors, and emotional dysregulation (10, 12), its impact on deeper and more enduring interpersonal patterns appears to be more variable. Although DBT includes an interpersonal effectiveness skills module, these skills primarily focus on behavioral strategies for managing interpersonal situations rather than on transforming underlying relational schemas. As a result, improvements in interpersonal functioning may be more incremental and context-dependent, which may explain why DBT, although effective, was less impactful than schema therapy in the present study.

The superior effectiveness of schema therapy in improving interpersonal relationships can be understood in light of its theoretical emphasis on early maladaptive schemas, attachment needs, and schema modes that are directly activated in close relationships. Schema therapy conceptualizes interpersonal dysfunction in borderline personality disorder as arising from deeply ingrained patterns formed in response to early relational trauma, emotional deprivation, and invalidation (15). By explicitly targeting modes such as the Abandoned Child, Angry/Impulsive Child, Detached Protector, and Punitive Parent, schema therapy directly intervenes in the emotional and cognitive processes that drive unstable and conflictual relationships. The present findings are consistent with randomized clinical trials showing that schema therapy leads to substantial improvements in interpersonal functioning and overall quality of life in patients with borderline personality disorder (15). Moreover, the emphasis on limited reparenting and a corrective emotional experience within the therapeutic relationship may foster internalization of more secure attachment representations, thereby generalizing to relationships outside therapy.

These results also align with developmental and interpersonal models of borderline personality disorder, which emphasize that relational instability is not merely a behavioral deficit but a manifestation of disrupted self–other representations and impaired emotion regulation in interpersonal contexts (5, 6). Schema therapy’s experiential techniques, such as imagery rescripting and chair work, may be particularly effective

in accessing and modifying these representations, leading to more profound and enduring changes in how patients perceive themselves and others. In contrast, dialectical behavior therapy, while highly effective in teaching coping and regulation skills, may leave some of these deeper relational structures relatively intact, especially in short- to medium-term interventions.

Nevertheless, the significant improvements observed in the dialectical behavior therapy group should not be understated. The results support a substantial body of evidence indicating that DBT enhances interpersonal functioning by increasing emotional awareness, distress tolerance, and assertive communication skills (11, 13). For many patients, learning how to regulate intense emotions and navigate interpersonal conflicts more effectively can reduce relational chaos and improve relationship stability. Furthermore, DBT's structured and skills-based format may be particularly beneficial for patients with high impulsivity or acute risk behaviors, as demonstrated in recent trials comparing DBT with pharmacological treatments (12). The present findings suggest that DBT constitutes an effective intervention for interpersonal difficulties, albeit one that may be complemented or surpassed by schema-focused approaches when the primary treatment goal is deep interpersonal change.

The differential effectiveness observed in this study also resonates with recent discussions in the literature regarding the mechanisms of change in treatments for borderline personality disorder. Comparative and mechanism-focused research has highlighted that while DBT primarily operates through skills acquisition and contingency management, schema therapy exerts its effects through modification of maladaptive schemas and internal working models of relationships (16). The present findings provide empirical support for this distinction by demonstrating that schema therapy may be particularly well-suited for addressing interpersonal dysfunction, which is closely tied to schema-level processes. These results also complement emerging evidence that schema therapy is especially valuable in cases where standard treatments are insufficient or when interpersonal pathology is particularly severe (18).

From a broader clinical perspective, the findings underscore the importance of aligning treatment selection with the primary areas of impairment in borderline personality disorder. Interpersonal dysfunction has been identified as one of the most persistent predictors of poor long-term outcomes, including relationship breakdown, occupational instability, and reduced quality of life (3, 4). The superior performance of schema therapy in improving interpersonal relationships suggests that it may offer distinct advantages for patients whose presenting problems are dominated by relational instability and attachment-related difficulties. At the same time, the demonstrated efficacy of DBT highlights its continued relevance, particularly for patients with prominent self-harm or emotion regulation difficulties, and suggests that treatment sequencing or integration may be a fruitful avenue for optimizing outcomes.

Despite the strengths of the present study, several limitations should be acknowledged. First, the relatively small sample size may limit the generalizability of the findings and reduce statistical power for detecting more subtle effects or moderators of treatment response. Second, the follow-up period was limited to three months, which restricts conclusions regarding the long-term stability of treatment gains. Third, reliance on self-report measures of interpersonal relationships may have introduced response biases, and future studies would benefit from incorporating multi-method assessments, including clinician ratings or behavioral observations. Finally, the study was conducted within a specific cultural and clinical context, which may limit the applicability of the findings to other populations or treatment settings.

Future research should aim to replicate these findings in larger and more diverse samples, with longer follow-up periods to assess the durability of interpersonal changes over time. Comparative studies examining the mechanisms of change underlying schema therapy and dialectical behavior therapy would be particularly valuable, as they could clarify how and why these treatments differentially affect interpersonal functioning. Additionally, future investigations might explore hybrid or sequential treatment models that combine the strengths of both approaches, as well as the role of patient characteristics, such as attachment style or trauma history, in predicting differential treatment response.

From a practical standpoint, the results of this study suggest that clinicians working with patients with borderline personality disorder should carefully assess the centrality of interpersonal difficulties when selecting an intervention. Schema therapy may be especially beneficial for individuals with entrenched relational patterns and attachment-related problems, while dialectical behavior therapy remains a strong option for those requiring immediate stabilization and skills development. Mental health services should consider increasing access to schema-focused interventions and providing specialized training for therapists in both approaches to allow for flexible, individualized treatment planning.

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Authors' Contributions

All authors equally contributed to this study.

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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