KMAN PUBLISHING INSTITUTE
Journal Website

Article history:
Received 13 December 2025
Revised 01 April 2026
Accepted 09 April 2026
Initial Published 25 April 2026
Final Publication 01 July 2026

Psychology of Woman Journal

Volume 7, Issue 4, pp 1-10

E-ISSN: 3041-8615

Can Self-Repair Training Help Women with Symptoms of Borderline Personality Disorder? A Quasi-Experimental Study

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A r t i c l e I n f o

Article type:
Original Research

How to cite this article:
Yekta, M., Golparvar, M., & Yousefi, Z. (2026). Can Self-Repair Training Help Women with Symptoms of Borderline Personality Disorder? A Quasi-Experimental Study. *Psychology of Woman Journal, 7*(4), 1-10.
http://dx.doi.org/10.61838/kman.pwj.5208

A B S T R A C T

Objective: The present study was conducted to determine the capacity of self-repair training to help women with symptoms of borderline personality disorder improve self-regulation and weaken neurotic defense mechanisms.

Methods and Materials: This study employed a quasi-experimental design with three stages: pretest, posttest, and follow-up, along with a control group. The statistical population consisted of women with symptoms of borderline personality disorder in the city of Isfahan during the summer of 2025 who were referred to four centers active in this field. Among them, 40 women were purposively selected and assigned to an experimental group and a control group (20 participants in each group). The Self-Regulation Questionnaire (Gratz & Roemer, 2004) and the Neurotic Defense Mechanisms Questionnaire (Andrews et al., 1993) were used to assess the dependent variables at the three stages. The self-repair training group received training over 10 sessions, whereas the control group received no training. Data were analyzed using repeated-measures analysis of variance and Bonferroni post hoc test in SPSS version 26.

Findings: The results showed that there was a significant difference between the self-repair training group and the control group in the variables of self-regulation and neurotic defense mechanisms ($p < .05$). This means that self-repair training helped women with symptoms of borderline personality disorder improve their level of self-regulation and, in contrast, reduce their use of neurotic defense mechanisms.

Conclusion: Therefore, self-repair training can be used in treatment centers to help women struggling with symptoms of borderline personality disorder.

Keywords: *self-repair training, self-regulation, neurotic defense mechanisms, women with symptoms of borderline personality disorder*

1. Introduction

Borderline personality disorder (BPD) is a complex and severe psychiatric condition characterized by pervasive instability in affect regulation, interpersonal relationships, self-image, and impulse control, which significantly impairs psychosocial functioning and quality of life (Leichsenring et al., 2024; Lin et al., 2024). Individuals with BPD frequently experience intense emotional fluctuations, chronic feelings of emptiness, identity disturbance, and maladaptive coping strategies, which collectively contribute to heightened vulnerability to comorbid disorders and increased risk of self-harm and suicidal behaviors (Marrero et al., 2023; Socci et al., 2024). Epidemiological and clinical studies indicate that BPD traits are widely distributed across clinical populations, with considerable heterogeneity in symptom expression and severity, suggesting the need for targeted and individualized interventions (Lin et al., 2024; Wolf et al., 2023). Among affected populations, women with symptoms of BPD often present with more pronounced emotional dysregulation and relational instability, making them particularly in need of effective psychological support and intervention strategies (Bahmani et al., 2023; Yekta et al., 2026).

A central feature of BPD is impairment in emotion regulation, which has been identified as a transdiagnostic mechanism underlying a wide range of affective and anxiety-related disorders (Adolph & Margraf, 2024). Emotion dysregulation in BPD manifests as heightened emotional sensitivity, intense emotional responses, and a slow return to emotional baseline, often resulting in maladaptive behaviors such as impulsivity, self-harm, and interpersonal conflict (Schmidt et al., 2024; Woolgar et al., 2024). The multidimensional nature of emotion regulation has been extensively conceptualized, with components including awareness, acceptance, impulse control, and access to adaptive strategies (Gratz & Roemer, 2004). Empirical evidence suggests that deficits in these domains are strongly associated with the severity of BPD symptoms and related dysfunctions (Bahmani et al., 2023; Marrero et al., 2023). Moreover, difficulties in emotion regulation have been linked to broader impairments in self-regulation, which encompasses the ability to manage thoughts, emotions, and behaviors in a goal-directed manner (Adolph & Margraf, 2024).

In addition to emotion regulation deficits, maladaptive defense mechanisms constitute another core psychological process implicated in BPD. Defense mechanisms, conceptualized as unconscious psychological strategies employed to manage internal conflicts and emotional distress, play a crucial role in shaping individuals' adaptive or maladaptive functioning (Andrews et al., 1993). Individuals with BPD tend to rely more heavily on immature and neurotic defense styles, which are associated with poorer psychological adjustment and reduced functioning (Blanco et al., 2023; Yun et al., 2024). These maladaptive defenses, such as denial, projection, and dissociation, can exacerbate emotional instability and interfere with the development of coherent self-structures (Euler et al., 2024). Furthermore, research indicates that the presence and intensity of neurotic defense mechanisms can moderate treatment outcomes, highlighting their importance as both targets and predictors of therapeutic change in BPD interventions (Euler et al., 2024).

Another key dimension of BPD pathology is disturbance in identity and self-concept. Individuals with BPD often experience a fragmented and unstable sense of self, characterized by inconsistent self-representations and difficulties integrating emotional and cognitive aspects of identity (Mungo et al., 2024; Vater et al., 2015). Identity disturbance has been identified as a central mechanism contributing to emotional dysregulation and maladaptive interpersonal patterns in BPD (Ducasse et al., 2023). Theoretical and empirical models emphasize that disruptions in self-concept coherence hinder individuals' capacity for adaptive self-reflection and self-regulation, thereby perpetuating psychological distress (Mungo et al., 2024; Yekta et al., 2026). Consequently, interventions targeting the reconstruction and stabilization of self-concept are considered essential in addressing the core pathology of BPD.

Over the past decades, several evidence-based psychotherapeutic approaches have been developed for BPD, including dialectical behavior therapy (DBT), mentalization-based therapy (MBT), schema therapy, and cognitive analytic therapy (CAT), each targeting specific aspects of emotional, cognitive, and relational dysfunction (Leichsenring et al., 2024; Taylor et al., 2024). These approaches have demonstrated varying degrees of effectiveness in reducing symptom severity and improving functioning; however, limitations remain, including accessibility, cost, treatment duration, and variability in individual response (Drews-Windeck et al., 2023; Lindsay et al., 2024). In recent years, digital and e-mental health interventions have been explored as complementary or alternative treatment modalities, offering increased

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E-ISSN: 3041-8615

accessibility and scalability; nevertheless, their effectiveness remains moderate and context-dependent (Drews-Windeck et al., 2023; Xie et al., 2022). These limitations underscore the need for innovative and integrative interventions that address the multifaceted nature of BPD while being feasible for implementation in diverse clinical settings.

One promising conceptual framework in this regard is the notion of self-repair, which refers to the individual's capacity to restore psychological equilibrium following emotional disruption through adaptive regulatory processes (Reebye, 2006). Rooted in psychodynamic and self-psychological traditions, self-repair emphasizes the role of internal resources and relational experiences in facilitating emotional regulation and psychological integration (Segalla, 2021). In group psychotherapy contexts, processes of rupture and repair have been identified as critical mechanisms of therapeutic change, enabling individuals to develop more adaptive patterns of self-regulation and interpersonal functioning (Marmarosh, 2021). Self-repair processes involve multiple components, including self-acceptance, self-compassion, cognitive restructuring, narrative integration, and identity consolidation, which collectively contribute to improved psychological resilience and well-being (Yekta et al., 2026).

Recent empirical studies have highlighted the relevance of self-related processes in BPD, particularly in relation to identity formation, emotional regulation, and defense mechanisms (Mungo et al., 2024; Yun et al., 2024). For instance, interventions targeting disturbed identity and self-representation have shown promising results in reducing symptom severity and enhancing psychological functioning in individuals with BPD (Ducasse et al., 2023). Similarly, therapeutic approaches that integrate mindfulness, self-compassion, and cognitive restructuring have demonstrated effectiveness in improving emotion regulation and reducing maladaptive coping strategies (Fathi et al., 2021; Schmidt et al., 2024). These findings suggest that interventions focusing on the repair and integration of self-related processes may offer a comprehensive and effective approach to addressing the core features of BPD.

Despite these advancements, there remains a gap in the literature regarding structured interventions specifically designed to enhance self-repair capacities in individuals with BPD, particularly among women. Existing approaches often address components of self-repair indirectly, without explicitly targeting the integrative process of restoring and reconstructing the self in response to emotional and interpersonal disruptions (Yekta et al., 2026). Moreover, the interaction between self-regulation and defense mechanisms in the context of self-repair has received limited empirical attention, despite their central role in BPD pathology (Blanco et al., 2023; Euler et al., 2024). Addressing this gap is essential for developing more targeted and effective interventions that can simultaneously improve adaptive regulation and reduce maladaptive defensive functioning.

Given the complexity of BPD and the centrality of self-related disturbances, there is a clear need for integrative intervention models that combine elements of emotion regulation, cognitive restructuring, narrative therapy, and identity development within a coherent framework. Self-repair training, as an emerging intervention approach, has the potential to address these needs by systematically targeting the processes underlying emotional dysregulation, maladaptive defenses, and identity disturbance (Yekta et al., 2026). By enhancing individuals' capacity for self-reflection, emotional processing, and adaptive coping, such interventions may lead to sustained improvements in psychological functioning and well-being.

Therefore, the aim of the present study was to investigate the effectiveness of self-repair training in improving self-regulation and reducing neurotic defense mechanisms in women with symptoms of borderline personality disorder.

2. Methods and Materials

2.1. Study design and Participant

The present study is a quasi-experimental design with two groups, including a self-repair training group and a control group, with three stages of pretest, posttest, and a two-month follow-up. The statistical population consisted of women with symptoms of borderline personality disorder in the city of Isfahan during the summer of 2025 who were referred to four centers active in this field. From the aforementioned population, 40 participants (20 per group) were purposively selected based on inclusion criteria and then randomly assigned to the two groups using simple randomization (lottery method). Inclusion criteria included providing written informed consent, diagnosis of borderline personality disorder symptoms through a structured diagnostic interview based on the criteria of the fifth edition revised of the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders, willingness to participate in the study, acceptance of and adherence to the principles and rules of group training, absence of chronic psychological disorders, and not receiving parallel treatment or training. Exclusion criteria

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E-ISSN: 3041-8615

included lack of cooperation or unwillingness to continue participation in training sessions, failure to complete assignments, and absence from two or more training sessions. Ethical considerations observed in this study included confidentiality, use of data solely for research purposes, participants' full freedom to continue participation, provision of results upon request, and offering training to the control group after completion of the intervention phase.

In the data collection process, after random assignment of women with symptoms of borderline personality disorder into two groups (self-repair training and control), participants completed the self-regulation and defense mechanisms questionnaires at the pretest stage. Subsequently, the self-repair training group participated in a group-based intervention consisting of 10 sessions, each lasting 80 to 100 minutes, conducted in a counseling and psychotherapy center, while the control group received no intervention. After completion of the training sessions, participants in both groups completed the questionnaires again at the posttest stage and, after a two-month interval, at the follow-up stage.

2.2. Measures

To assess self-regulation, the questionnaire introduced by Gratz and Roemer (2004) in the domain of emotional dysregulation was used. This instrument consists of 36 items and covers the domains of non-acceptance of emotional responses (6 items), difficulties engaging in goal-directed behaviors (5 items), impulse control difficulties (6 items), lack of emotional awareness (6 items), limited access to emotion regulation strategies (8 items), and lack of emotional clarity (5 items). The response scale is a five-point Likert scale ranging from almost never = 1 to almost always = 5. The total score ranges from 36 to 180, with higher scores indicating greater levels of emotional and cognitive dysregulation. It should be noted that in the present study, by reversing the scoring scale (never = 5 to almost always = 1), higher scores were interpreted as higher levels of self-regulation. Gratz and Roemer (2004) documented the construct validity of this questionnaire through exploratory factor analysis and reported significant correlations between its scores and experiential avoidance (convergent validity) as well as emotional expressivity (divergent validity). The Cronbach's alpha for this questionnaire has been reported to range from 0.84 to 0.89 (Gratz & Roemer, 2004). In Iran, various versions of this questionnaire have been translated and validated. Kermani Mamazandi and Talaee Pasand (2018) reported evidence of construct validity through confirmatory factor analysis with acceptable fit indices. They also reported significant correlations between this questionnaire and the multidimensional anger questionnaire (convergent validity) and spiritual intelligence (divergent validity). The Cronbach's alpha for the total scale was reported as 0.86. In the present study, Cronbach's alpha was calculated as 0.84.

To assess defense mechanisms, the questionnaire developed and validated by Andrews et al. (1993) was used, specifically the section measuring neurotic defense mechanisms, which consists of 8 items. The response format is a nine-point Likert scale ranging from strongly agree = 9 to strongly disagree = 1. The score range for the neurotic level is 8 to 72, with higher scores indicating a greater tendency toward neurotic defense styles. The construct validity of this questionnaire has been supported through exploratory factor analysis, and its discriminant validity has been confirmed by comparing defense mechanism scores among individuals with immature, neurotic, and mature defense styles. Cronbach's alpha has been reported to range from 0.32 to 0.80, and test–retest reliability coefficients from 0.38 to 0.85 (Andrews et al., 1993). In Iran, Heidari Nasab et al. (2007) translated and validated this questionnaire on a sample of over 1,000 Iranian students. Content validity was confirmed through expert evaluation, and convergent and divergent validity were supported through correlations between defense styles and the Big Five personality traits (neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness). The Cronbach's alpha for neurotic defense mechanisms was reported as 0.50 (Heidari Nasab et al., 2007). In the present study, Cronbach's alpha was calculated as 0.70.

2.3. Intervention

The self-repair training package was developed for the first time in the present study and implemented after initial validation. Following a preliminary thematic analysis of scientific literature related to self-related problems in individuals with symptoms of borderline personality disorder, particularly women, the components required for self-repair were extracted, and the content validity ratio (CVR) obtained through three independent coders was equal to 1. Subsequently, educational techniques corresponding to each theme were derived through conventional content analysis. These techniques were then organized into a 10-

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session intervention protocol by an expert panel consisting of six psychologists with more than 10 years of experience in training and psychotherapy. The initial therapeutic package was reviewed by six expert judges in psychology, and after incorporating their revisions, an overall agreement coefficient of 0.98 was achieved. Following expert approval, a pilot study was conducted on ten women with symptoms of borderline personality disorder, confirming the preliminary effectiveness and validity of the intervention package.

In the first session, participants were introduced to one another, and the objectives and practical applications of the therapeutic program were clarified; the overall structure and goals of the intervention were presented, symptoms and characteristics of borderline personality disorder were explained, and training focused on unconditional self-acceptance and self-forgiveness was provided, followed by a session summary and assignment of homework.

In the second session, previous homework was reviewed, and training on the repair of self-acceptance was continued while introducing self-concept repair; participants were trained in self-compassion and techniques for reconstructing self-concept, followed by summarization and homework assignment.

In the third session, after reviewing homework, training on self-concept reconstruction continued with a focus on managing negative emotions and affect; participants were taught emotional regulation strategies, self-resilience, and psychological flexibility, followed by session summary and homework.

In the fourth session, after reviewing prior assignments, cognitive and behavioral repair training was initiated; participants learned to identify maladaptive thoughts, schemas, and attitudes, and were trained in techniques for replacing dysfunctional and negative cognitions, followed by summarization and homework.

In the fifth session, after reviewing homework, cognitive and behavioral repair training was continued and narrative self-repair was introduced; participants received training in self-management, self-control, and narrative techniques such as externalizing problems, followed by session summary and homework.

In the sixth session, after reviewing assignments, training on narrative self-repair continued; participants were taught how to structure a new life narrative and reconstruct their personal life stories, followed by summarization and homework.

In the seventh session, after reviewing homework, identity repair training was initiated; participants were trained in correcting self-representation and modifying maladaptive identity identifications, followed by session summary and homework.

In the eighth session, after reviewing assignments, identity repair training was continued and self-empowerment training was introduced; participants were trained in emotional validation, problem-focused coping strategies, self-regulation, and emotion regulation, followed by summarization and homework.

In the ninth session, after reviewing homework, self-empowerment training continued; previous assignments were reviewed, participants' questions and difficulties were addressed, and training focused on meaning expansion, confronting existential concerns, and promoting self-care for mental health and well-being, followed by session summary and homework.

In the tenth session, after reviewing homework, the entire training program was summarized, the posttest was administered, arrangements were made for the two-month follow-up phase, and the intervention was formally concluded.

2.4. Data Analysis

For statistical analysis, the assumption of normality was examined using the Shapiro–Wilk test, homogeneity of error variances was assessed using Levene's test, homogeneity of variance–covariance matrices was evaluated using Box's M test, and the assumption of sphericity was examined using Mauchly's test. Descriptive statistics, including means and standard deviations, were calculated, and repeated-measures analysis of variance along with Bonferroni post hoc tests were used to determine differences between the experimental (self-repair training) and control groups. Data were analyzed using SPSS version 26.

3. Findings and Results

The two research groups were compared in terms of age, education, marital status, and employment status using the chi-square test. The results of the demographic variables are presented in Table 1.

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Table 1

Comparison of Frequency Distribution of Research Groups in Demographic Variables

Variable and Levels	Self-Repair Training Frequency (%)	Control Group Frequency (%)	Chi-square (Significance)
Age			1.04 (p > .05)
Up to 25 years	3 (15)	2 (10)	
26–35 years	10 (50)	13 (65)	
36–45 years	5 (25)	4 (20)	
46 years and above	2 (10)	1 (5)	
Education			1.31 (p > .05)
Up to diploma	6 (30)	3 (15)	
Associate and bachelor's degree	11 (55)	13 (65)	
Master's and doctoral degree	3 (15)	4 (20)	
Marital Status			0.53 (p > .05)
Single	6 (30)	4 (20)	
Married	14 (70)	16 (80)	
Employment Status			0.11 (p > .05)
Unemployed	7 (35)	8 (40)	
Employed	13 (65)	12 (60)	

As shown in Table 1, there were no significant differences between the two research groups in demographic variables. Table 2 presents the means and standard deviations of self-regulation and neurotic defense mechanisms across the two groups and three time points (pretest, posttest, and follow-up).

Table 2

Means and Standard Deviations of Self-Regulation and Neurotic Defense Mechanisms in Two Groups Across Three Time Points

Variable	Time	Self-Repair Training Mean	SD	Control Group Mean	SD
Self-Regulation	Pretest	42.30	4.75	40.35	4.07
	Posttest	51.65	3.15	41.50	3.72
	Follow-up	52.65	2.98	41.45	3.55
Neurotic Defense Mechanisms	Pretest	56.40	3.01	57.00	3.67
	Posttest	43.75	4.16	57.25	4.29
	Follow-up	42.45	4.43	58.15	4.31

As shown in Table 2, the mean scores of self-regulation and neurotic defense mechanisms indicate that the self-repair training group demonstrated greater changes compared to the control group at posttest and follow-up. Prior to conducting repeated-measures ANOVA, the results of the Shapiro–Wilk test ($p \geq .05$) and Levene's test indicated normal distribution of data and homogeneity of error variances across groups for both variables ($p \geq .05$). Box's M test also indicated equality of variance–covariance matrices for self-regulation and neurotic defense mechanisms ($p \geq .05$). The results of Mauchly's test for sphericity were significant, indicating that the assumption of sphericity was violated for both variables. Therefore, based on epsilon correction in the degrees of freedom for the time factor and the interaction of group and time, results were reported using the Greenhouse–Geisser correction. The results of repeated-measures ANOVA for self-regulation and neurotic defense mechanisms are presented in Table 3.

Table 3

Results of Repeated-Measures ANOVA for Self-Regulation and Neurotic Defense Mechanisms

Source of Effect	Sum of Squares	df	Mean Square	F	Significance	Partial Eta Squared	Power
Self-Regulation							
Within-group Time	807.52	1.43	565.48	251.25	.001	.87	1
Time × Group	513.02	1.43	359.25	159.62	.001	.81	1
Error (Time)	122.13	54.26	2.25	-	-	-	-
Between-group Group	1809.63	1	1809.63	46.47	.001	.55	1
Error	1479.67	38	38.94	-	-	-	-
Neurotic Defense Mechanisms							

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E-ISSN: 3041-8615

Within-group Time	778.40	1.30	600.34	249.68	.001	.87	1
Time × Group	1016.47	1.30	783.95	326.05	.001	.90	1
Error (Time)	118.47	49.27	2.40	-	-	-	-
Between-group Group	2688.53	1	2688.53	59.56	.001	.61	1
Error	1715.33	38	45.14	-	-	-	-

As shown in Table 3, for self-regulation, within-group effects indicated that the time factor ($F = 251.25$, $df = 1.43$, $p < .01$) and the interaction of time and group ($F = 159.62$, $df = 1.43$, $p < .01$) were significant. The partial eta squared for time was .87 with statistical power of 1, and for the interaction of time and group it was .81 with statistical power of 1. These results indicate that 87% and 81% of the variance in self-regulation were attributable to the implementation of the self-repair training program, respectively. Furthermore, the between-group effect for group ($F = 46.47$, $df = 1$, $p < .01$) was significant, with a partial eta squared of .55 and statistical power of 1, indicating that 55% of the variance in self-regulation was explained by differences between the self-repair training and control groups. This demonstrates that self-repair training had a significant effect on improving self-regulation in women with symptoms of borderline personality disorder.

As shown in Table 3, for neurotic defense mechanisms, within-group effects indicated that the time factor ($F = 249.68$, $df = 1.30$, $p < .01$) and the interaction of time and group ($F = 326.05$, $df = 1.30$, $p < .01$) were significant. The partial eta squared for time was .87 with statistical power of 1, and for the interaction of time and group it was .90 with statistical power of 1. These findings indicate that 87% and 90% of the variance in neurotic defense mechanisms were attributable to the self-repair training intervention, respectively. Additionally, the between-group effect for group ($F = 59.56$, $df = 1$, $p < .01$) was significant, with a partial eta squared of .61 and statistical power of 1, indicating that 61% of the variance in neurotic defense mechanisms was explained by differences between the two groups. This indicates that self-repair training significantly reduced neurotic defense mechanisms in women with symptoms of borderline personality disorder compared to the control group.

Table 4

Results of Bonferroni Post Hoc Test for Self-Regulation and Neurotic Defense Mechanisms Across Time

Variable	Row	Reference Group	Comparison Group	Mean Difference	Standard Error	Significance
Self-Regulation	1	Pretest	Posttest	7.25	0.32	.001
	2	Pretest	Follow-up	7.72	0.33	.001
	3	Posttest	Follow-up	-0.47	0.17	1.00
Neurotic Defense Mechanisms	1	Pretest	Posttest	8.30	0.28	.001
	2	Pretest	Follow-up	8.50	0.36	.001
	3	Posttest	Follow-up	-0.35	0.17	.17

As shown in Table 4, for both self-regulation and neurotic defense mechanisms, there were significant differences between pretest and posttest as well as between pretest and follow-up ($p < .05$), whereas no significant differences were observed between posttest and follow-up ($p > .05$). This indicates that significant changes occurred from pretest to posttest and follow-up, and these changes remained stable over time.

4. Discussion

The present study aimed to investigate the effectiveness of self-repair training in improving self-regulation and reducing neurotic defense mechanisms in women with symptoms of borderline personality disorder (BPD). The findings demonstrated that self-repair training led to significant improvements in self-regulation and significant reductions in neurotic defense mechanisms compared to the control group. These effects were observed not only at the posttest stage but were also maintained at the two-month follow-up, indicating the relative stability of the intervention outcomes over time. The results of repeated-measures analysis of variance further confirmed that both the main effects of time and group, as well as their interaction, were statistically significant with large effect sizes, suggesting that the observed changes can be meaningfully attributed to the implementation of the self-repair training program.

The observed improvement in self-regulation among participants in the self-repair training group is consistent with theoretical and empirical literature emphasizing the central role of emotion regulation deficits in BPD. Emotion

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dysregulation has been identified as a core transdiagnostic mechanism underlying BPD symptomatology, influencing impulsivity, interpersonal instability, and affective disturbances (Adolph & Margraf, 2024; Woolgar et al., 2024). The self-repair training protocol, which incorporated components such as self-acceptance, self-compassion, emotional awareness, and cognitive restructuring, appears to have effectively targeted multiple dimensions of self-regulation as conceptualized in multidimensional frameworks (Gratz & Roemer, 2004). These findings align with previous studies indicating that interventions focusing on mindfulness, emotional awareness, and adaptive coping strategies can significantly enhance emotion regulation capacities in individuals with BPD (Bahmani et al., 2023; Schmidt et al., 2024). Moreover, the sustained improvement observed at follow-up suggests that the skills acquired during the intervention were internalized and generalized beyond the training context, reflecting the development of more stable regulatory capacities.

The effectiveness of self-repair training in enhancing self-regulation may also be understood in light of the concept of self-related processing and identity integration. Individuals with BPD often exhibit fragmented and unstable self-concepts, which undermine their ability to regulate emotions and behaviors effectively (Mungo et al., 2024; Vater et al., 2015). By targeting self-concept reconstruction and narrative integration, the intervention likely facilitated greater coherence in self-representation, thereby enhancing participants' capacity for self-regulation. This interpretation is supported by research demonstrating that interventions focused on identity restructuring and self-integration can lead to significant improvements in emotional and behavioral regulation in BPD populations (Ducasse et al., 2023). Additionally, qualitative findings on self-repair processes highlight the importance of fostering self-acceptance and internal coherence in promoting psychological resilience and adaptive functioning (Yekta et al., 2026).

Another important finding of the present study is the significant reduction in neurotic defense mechanisms among participants in the self-repair training group. Defense mechanisms play a crucial role in mediating individuals' responses to internal conflicts and external stressors, and maladaptive defense styles are particularly prevalent in individuals with BPD (Andrews et al., 1993; Blanco et al., 2023). The observed reduction in neurotic defenses suggests that self-repair training may have facilitated a shift toward more adaptive coping strategies, enabling participants to process emotional experiences more effectively rather than relying on maladaptive defenses. This finding is consistent with prior research indicating that therapeutic interventions can modify defense styles and improve psychological functioning in individuals with BPD (Fathi et al., 2021). Furthermore, studies have shown that maladaptive defense mechanisms can moderate treatment outcomes, highlighting their importance as targets of intervention (Euler et al., 2024).

The reduction in neurotic defense mechanisms may be explained by several mechanisms inherent in the self-repair training protocol. First, the emphasis on emotional awareness and acceptance likely reduced the need for defensive avoidance and distortion, as individuals became more capable of tolerating and processing emotional experiences (Woolgar et al., 2024). Second, cognitive restructuring techniques may have helped participants identify and modify maladaptive thought patterns, thereby reducing reliance on defenses such as denial and projection. Third, narrative reconstruction and identity repair components may have facilitated a more coherent and integrated sense of self, reducing the internal conflicts that often give rise to defensive processes (Mungo et al., 2024; Yun et al., 2024). These mechanisms collectively contribute to a more adaptive psychological functioning, as reflected in the observed outcomes.

The findings of the present study also resonate with broader psychotherapeutic models that emphasize processes of rupture and repair as central to therapeutic change. In group psychotherapy contexts, the ability to recognize, process, and repair emotional disruptions is considered a key mechanism underlying improvement in interpersonal and intrapersonal functioning (Marmarosh, 2021; Segalla, 2021). The self-repair training intervention, by systematically targeting these processes, appears to have facilitated participants' capacity to manage emotional and relational challenges more effectively. This is particularly relevant in the context of BPD, where interpersonal difficulties and emotional instability are prominent features (Leichsenring et al., 2024).

Moreover, the results of the present study contribute to the growing body of literature on innovative and integrative interventions for BPD. While established treatments such as dialectical behavior therapy and cognitive analytic therapy have demonstrated effectiveness, they are often resource-intensive and may not be accessible to all individuals in need (Leichsenring et al., 2024; Taylor et al., 2024). The development and evaluation of self-repair training as a

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E-ISSN: 3041-8615

structured, group-based intervention provide a potentially feasible and scalable alternative or complement to existing approaches. This is particularly important in light of the increasing interest in digital and low-intensity interventions, which aim to enhance accessibility while maintaining effectiveness (Drews-Windeck et al., 2023; Lindsay et al., 2024; Xie et al., 2022). Although the present study did not examine digital delivery, the structured nature of the intervention suggests potential for adaptation to such formats.

In addition, the present findings highlight the importance of targeting multiple interrelated processes in the treatment of BPD. Rather than focusing solely on symptom reduction, self-repair training addresses underlying mechanisms such as emotion regulation, defense styles, and identity integration, which are central to the disorder's pathology. This integrative approach is consistent with contemporary perspectives on BPD as a disorder of the self, involving complex interactions between affective, cognitive, and interpersonal processes (Leichsenring et al., 2024). By addressing these processes simultaneously, self-repair training may offer a more comprehensive and sustainable pathway to recovery.

5. Conclusion

Overall, the results of the present study provide strong support for the effectiveness of self-repair training in improving self-regulation and reducing neurotic defense mechanisms in women with symptoms of BPD. The consistency of these findings with existing theoretical and empirical literature underscores the validity of the intervention and its underlying conceptual framework. Furthermore, the observed stability of effects over time suggests that self-repair training may have enduring benefits, contributing to long-term improvements in psychological functioning and well-being.

6. Limitations and Suggestions

One limitation of the present study is the relatively small sample size, which may limit the generalizability of the findings to broader populations. Additionally, the use of purposive sampling and the focus on women with symptoms of BPD in a specific cultural context may further restrict the external validity of the results. Another limitation is the reliance on self-report measures, which may be subject to response biases such as social desirability and recall bias. Furthermore, the follow-up period was limited to two months, which may not fully capture the long-term sustainability of the intervention effects.

Future research is recommended to examine the effectiveness of self-repair training in larger and more diverse samples, including male participants and individuals from different cultural backgrounds. Longitudinal studies with extended follow-up periods are also needed to assess the durability of treatment effects over time. Additionally, future studies could explore the integration of self-repair training with other evidence-based interventions, as well as its adaptation for digital and online delivery formats. Investigating potential mediators and moderators of treatment outcomes, such as baseline severity of symptoms and individual differences in personality traits, may also provide valuable insights into the mechanisms of change.

In terms of practical implications, the findings of the present study suggest that self-repair training can be effectively implemented in counseling and psychotherapy centers as a structured group intervention for women with symptoms of borderline personality disorder. Mental health professionals may incorporate components of self-repair training, such as self-acceptance, emotional regulation, cognitive restructuring, and narrative integration, into their clinical practice to enhance treatment outcomes. Additionally, training programs for therapists may include modules on self-repair processes to improve their ability to address self-related disturbances in clients with BPD.

Authors' Contributions

Authors equally contributed to this article.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

Acknowledgments

We would like to express our gratitude to all individuals helped us to do the project.

Declaration of Interest

The authors report no conflict of interest.

PWJ
Psychology of Woman Journal
E-ISSN: 3041-8615

Funding

According to the authors, this article has no financial support.

Ethical Considerations

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

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Psychology of Woman Journal
E-ISSN: 3041-8615