

# THE EFFICACY OF DYNAMIC DECONSTRUCTIVE PSYCHOTHERAPY IN TREATMENT OF BORDERLINE PERSONALITY DISORDER: INTRODUCING AN EVIDENCE-BASED THERAPEUTIC MODEL

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## Abstract

**Background & Aims:** The characteristics of individuals with borderline personality disorder and the complex nature of this disorder suggest the need to find effective treatments. The present research has been conducted to introduce Dynamic Deconstructive Psychotherapy (DDP) and to evaluate whether it is an effective model for the treatment of borderline personality disorder in Iranian society.

**Materials & Methods:** This research was a randomized controlled trial utilizing a pre-test and post-test design with a control group of enhanced usual care. Among the patients with borderline personality disorder referred by psychological and psychiatric clinics in Gonbad-e-Kavoos city, 30 consecutive participants with borderline personality disorder were selected and randomly assigned to the two treatment groups. Participants completed the Borderline Evaluation of Severity over Time (BEST) and the Patient Health Questionnaire Mood Scale (PHQ-9) at the time of entering the research (baseline), and also in the 3th month, the 6th month and the 9th month of the treatment. Repeated Measures ANOVA and SPSS19 software were used for statistical analysis.

**Results:** The results obtained from the analysis of variance indicated that the DDP was effective in reducing the core symptoms of borderline personality disorder and depression.

**Conclusion:** According to the findings of this research, DDP appears to be an efficient and cost-effective therapeutic treatment. These findings have theoretical and practical implications.

**Keywords:** Dynamic deconstructive psychotherapy, Borderline personality disorder, Depression symptoms, Evidence-based

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## Introduction

A personality disorder is a long-term pattern of internal and behavioral experience that is far from the individual's cultural expectations (1). In clinical

populations, borderline personality disorder (BPD) is observed in 10% to 60% of cases; the prevalence of this disorder is higher than other personality disorders and is between 1.3% and 1.4% in the general population (2, 3,

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4). According to DSM-5, borderline personality disorder is a pervasive pattern of instability in interpersonal relationships, self-image, emotions, and behaviors (1). This chronic and debilitating syndrome is associated with high rates of utilizing medical and psychiatric services (5). Approximately 70% of BPD people engage in repeated self-harm behaviors (6) and eventually up to 10% commit suicide (7). BPD is significantly comorbid with other psychiatric disorders (5), and there is evidence that BPD has an adverse and undesirable effect on other effective therapies (8).

There are different therapies that have been shown to be effective for treating patients with borderline personality disorder. Transference Focused Therapy and Mentalization-Based Treatment are two common psychodynamic approaches for treatment of BPD (9). Gregory and Remen (10) also introduced the Dynamic Deconstructive Psychotherapy (DDP) model for treating this category of personality disorders. This treatment is a combination of object relations theory, neuroscience, and Derrida's deconstruction philosophy. DDP hypothesizes two main causes for BPD. The first is a deep and often unconscious sense of embedded badness, such as being evil, defective, worthless, lazy, or ugly (11, 12, 13). Many factors may contribute to this negative self-image. In longitudinal studies, trauma and neglect have been associated with the development of BPD and can lead to impaired self-esteem (14). However, many BPD patients do not have a history of trauma or neglect, and the embedded sense of badness can result from teasing or bullying at school, problematic early mother-infant attachment (15), or a genetic tendency to social inhibition and impulsive aggression (16). Regardless of the cause, this feeling can be an explanation for many symptoms of BPD, especially rejection sensitivity, mood lability, and suicide risk.

The second hypothesized cause is impaired emotion processing. According to the findings and advances in

neuroscience, Gregory (17) has proposed the Emotion Processing Hypothesis. Based on this hypothesis, BPD instead of being an impairment or deficit in emotion regulation is impairment in emotion processing. According to this hypothesis, in order to have a coherent, stable and distinct self, it is necessary to have three neuro-affective abilities. These three neuro-affective functions include association (the ability to identify and label individual's emotional experiences), attribution (the ability to attribute complex meanings to those experiences) and alterity (the ability to externally and objectively measure the accuracy of one's attributions) (17). According to research, individuals with BPD show deficiencies in identifying their emotions, distinguishing emotions and labeling their emotions compared to healthy people (18, 19, 20). They also tend to have simple, distorted, and polarized attributions of their experiences (21). Alterity is a term borrowed from the philosophical literature, and used by Gregory to mean a reference point outside the subjectivity of self, which has been described by Derrida as the absolute outside (22). When individuals' capacity for alterity is restricted, they live in a magical world where behaviors such as cutting and substance use take on special meanings, individuals will face difficulty in measuring the authenticity and accuracy of attribution and the motives, and they cannot establish clear boundaries between themselves and others.

DDP theory and techniques are summarized in an on-line treatment manual called, *REMEDIATION FOR TREATMENT-RESISTANT BORDERLINE PERSONALITY DISORDER: Manual of Dynamic Deconstructive Psychotherapy* (17). Treatment with DDP is limited to 12 month duration and was developed especially for more severe and refractory cases, especially those who have comorbidity of complex behavioral problems such as drug and alcohol dependence, self-harm, eating disorders and chronic suicide attempts. The purpose of this treatment is to

support an integrated function of self and to deconstruct the maladaptive polarized attributions interfering with the therapeutic alliance. DDP treatment helps clients connect with their experiences and create more satisfactory, authentic, and healthier relationships with others (17). DDP attempts to improve the three neuro-affective deficits that are responsible for the healthy processing of emotional experiences using four sets of techniques: association, attribution, alterity-ideal, and alterity-real techniques.

Gregory, Deranja and Mogle (24) examined 30 BPD patients with comorbid alcohol use disorder, who were randomly assigned to two groups of treatment over 12 months: DDP and Optimized Community Care (OCC), each consisting of 15 subjects. According to the results, DDP is a cost-effective therapy that can lead to extensive and sustained improvement in patients with borderline personality disorder. In addition, patients in a 30-month naturalistic follow-up of that trial, showed significant continued improvement in core symptoms of borderline personality disorder, depression, suicide, heavy drinking and recreational drug use. Other research findings that compared the effectiveness of DDP and dialectical behavior therapy at a medical university clinic indicated that DDP was significantly more effective for borderline personality disorder, self-harm, depression and disability in borderline patients (25). In Goldman and Gregory's study (26), aimed at determining the relationship between DDP techniques and its implications for BPD, it was found that various DDP techniques are effective for different aspects of borderline pathology. Also, the results of Gregory et al. (27) showed that 6-month DDP treatment reduced the risk of alcohol abuse, suicidal behaviors, and institutional care by 31 to 55%. The findings of this study showed that this therapy is significantly effective in maintaining and keeping patients who have difficulty in committing to the therapeutic process.

The DDP approach, by integrating the findings and research of neuroscience and object relations, has brought these two important areas together both in the etiology and treatment of BPD, and has introduced an innovative model. Characteristics of patients with borderline personality disorder and also the increased prevalence of BPD in Iranian society (28) justify the necessity of conducting research on the treatment of this disorder. The high prevalence rate of BPD and the high costs that these individuals impose to their family and society have given rise to increasing attention to the etiology and treatment of this disorder (28). The introduction of evidence-based therapies can be effective in increasing knowledge about this disorder and improving methods of efficient treatment.

The present study is the first time that this therapeutic model is introduced to the Iranian society and so far no research has been done on the effectiveness of this treatment. According to the research evidence and the manual that confirmed the efficacy of treatment after six months of treatment (17, 27), in the present research, the results of 9 months of treatment are investigated. The current study aimed at examining the effectiveness of DDP as an efficient and cost-effective method for the treatment of patients with BPD. Therefore, the present study intends to determine the effectiveness and effect size of this treatment on core symptoms and depression of patients with BPD after 9 months of treatment.

## Materials and Methods

This research had a controlled experimental design with pre-test, post-test and a control group. The research sample consisted of consecutive patients with BPD who had been referred to the study from psychologic and psychiatric clinics and addiction treatment centers in the city of Gonbad-e-Kavos in the time period of 2016-2017. After approval of the research by the Ethics Committee of Semnan University (No. 98/95/234), 30

individuals who were diagnosed as having BPD based on a psychiatrist's diagnosis and according to the results of the structured clinical interview (SCID-II) performed by the principal investigator (EM) were selected and agreed to participate in the treatment study. The participants were randomly assigned utilizing a random number generation method to two treatment groups: DDP or a control treatment. Inclusion and exclusion criteria were as follows: Inclusion criteria: 1) meeting the criteria for BPD based on a psychiatrist's diagnosis and the SCID-II structured clinical interviews; 2) 18-40 years of age; 3) agreement with participating in the treatment study; and 4) having a high school diploma. The exclusion criteria for this study were: 1) meeting diagnostic criteria for a primary psychotic disorder, and 2) diagnosis of neurological diseases or mental retardation. Individuals meeting the research criteria were selected and after agreeing to participate in the study, the informed consent form was provided to the participants. Assuring the participants of the confidentiality of information, the possibility of leaving the research at any time during the therapy, and obtaining informed consent to participate in the research was among the ethical considerations observed in the present study. Each participant was assessed in four stages (baseline, third months, sixth months, and ninth months). The duration of dynamic deconstructive psychotherapy is one year, but according to previous studies that have reported the therapeutic responses since the sixth month (17, 27), the questionnaires were administered to the participants at the end of the ninth month.

To evaluate the effectiveness of DDP on the improvement of the core symptoms of BPD and depression, one-way ANOVA with repeated measures was applied utilizing SPSS-19 software. The research data of the experimental group and the control group were collected by a psychology graduate student who

was unaware of the groups and objectives of the study.

The instruments used in this research were:

**Structured Clinical Interview for Assessing Axis II (SCID-II):** This semi-structured interview was used for diagnosis of 10 Personality Disorders in Axis II of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV). This tool allows for diagnose of ten personality disorders, NOS personality disorders, as well as depressive personality disorders and passive-aggressive personality in two dimensional and categorical approaches. The final version of this interview was published by the APA Press in 1997. The SCID-II interview has three columns, the right column includes interview questions, the central column contains the DSM-based diagnostic criteria, and the third column is for evaluating the items with the following symbols: ? = Insufficient information, "1" = non-existence of the symptom, "2" = lower than the threshold, "3" = at the threshold level (29). In a research by Maffei et al. (30), the inter-rater reliability was reported to be in the range of 0.48 to 0.98 for the categorical diagnosis and 0.90 to 0.98 for the dimensional diagnosis. Also, the internal consistency coefficients, which were between 0.71 and 0.94, indicate the satisfactory reliability of the interview. In Iran, the results of a study by Sharifi et al. (31) showed that the overall agreement was moderate to good (Kappa higher than 61%) for most of the diagnoses, indicating the proper validity and desirable applicability of this interview in the Iranian society.

**Borderline Evaluation of Severity over Time (BEST):** This instrument is a brief self-report questionnaire designed by Pfohl and Blum in the 1990s to measure the symptoms of borderline personality disorder. This scale consists of 15 items and three subscales (32). The questionnaire is scored by a 5-point Likert scale. Section A (Thoughts / Feelings) consists of 8 questions that assesses identity disturbance, mood reactivity, unstable relationships, paranoia, sense of

emptiness, and suicidal thinking. Section B (Negative Behaviors) consists of 4 items that measure negative behaviors, such as self-harm or anger outbursts. Items in these two sub-scales are scored from 1 (none/slight) to 5 (extreme). The last three items included in section (C) of the questionnaire (positive behaviors) measure positive behaviors, such as adaptive coping with stressors. These three items are scored from 5 (almost always) to 1 (almost never) (32). Sections A and B are designed based on DSM-5 criteria. Pfohl et al. (32) demonstrated good validity and reliability for this test. Cronbach's alpha was reported to be 0.89. In a Turkish version of the scale (33), used in a sample consisting of 306 students, the Cronbach's Alpha values obtained for section A, B, C and total scale were 0.80, 0.65, 0.67 and 0.75, respectively. The reliability coefficient for sub-scales A, B and C, gained using re-test method, was reported as 0.61, 0.50 and 0.5, respectively. In this study, Cronbach's alpha was 0.64 for thirty participants.

**Patient Health Questionnaire Mood Scale (PHQ-9):** This scale has been designed by Spitzer and colleagues (34) as a self-report tool to diagnose and measure the severity of depression in clinical settings. The participant rates his/her status in each of the nine symptoms of depression (consistent with DSM-5 criteria) during the past two weeks on a 4-point Likert scale (0 = not at all / 1 = several days / 2 = more than half days and 3 = nearly every day). Also, in question 10, participants specify the degree of interference of the symptoms with work, household chores, and relationships with following choices: not difficult at all, somewhat difficult, very difficult and extremely difficult. The last item provides a very good assessment of functional impairment and has been shown to have a strong relationship with a number of factors, such as quality of life, functional status and the use of health care services (34). The PHQ-9 has been used in clinical and medical settings, such as in primary care and in general hospitals. In the research by Rief et al. (35), the

Cronbach's alpha has been reported as 0.98, indicating a high internal consistency. This tool is strongly correlated with the Beck Depression Inventory, short form, and the General Health Questionnaire ( $r=.59$ ;  $P<.0001$ ) (36).

### Clinical Supervision

Like all the psychodynamic therapeutic models, clinical supervision, is an important part of DDP. Before starting to enter participants, the DDP provider in this study (EM), was supervised by an experienced clinical supervisor and founder of DDP (RG) for a 6-month period through weekly videoconferencing and worked with two BPD patients, in order to learn the concepts, techniques and be able to properly apply them. After reaching a level of basic competence in DDP treatment, the sampling process began. During the trial, weekly clinical supervision continued to the end of treatment. Given the importance of clinical supervision and due to language restrictions, each week, one or two of the psychotherapy sessions were transcribed, and after being translated into English, sent to the clinical supervisor to assess the degree of the therapist's adherence to the therapeutic techniques based on a DDP Adherence scale, and the therapist also received feedback by the supervisor. According to a prior study assessment correlation between adherence and outcome, an acceptable rate of DDP adherence is 70% (26). In the present study, the mean treatment adherence during the 9 months of treatment was 79%.

### The Study Treatments

1. Control Treatment. Participants assigned to the control group received enhanced usual care, which consisted of counseling and medication management provided by the referring clinic supplemented by a monthly group therapy run by a psychologist who was not part of the study. The group treatment provided support, education, and coping strategies for the participants.

2. Investigational Treatment. Participants assigned to the investigational group received weekly individual treatment with DDP, with each session lasting 50-60

minutes (see summary below). They also continued to receive medication management provided by the referring clinic.

**Summary of Contents and Stages of Dynamic Deconstructive Psychotherapy**

DDP consists of four therapeutic stages:

**Stage I:** Focus on establishing a therapeutic alliance and the central thematic question "Can I be safe here?" in the form of three safety concerns: **Caring** (Will my therapist provide the kind of nurturance and support that I so desperately want and need, or will he/she be cold, humiliating, or abandoning? **Respect** (Will my therapist support my independent decision-making and differentiation, or will he/she take away my autonomy and sense of self through infantilizing, intrusiveness, control, and smothering?) And **Containment** (Will my therapist be able to contain my neediness, grandiosity, and rage, or will I end up destroying the relationship? Prohibiting hostile behaviors during the session, empathic listening, facilitating verbal expression of emotional interpersonal experiences through Association techniques (including verbalization and elaboration of narrative sequences chains, and exploring emotional themes of creative activities). The sign for the end of the first stage is establishing a relatively constant idealizing transference.

**Step II:** Focus on the central thematic question, "Do I have a right to be angry?" The question of justification underlies one of the main unconscious conflicts of BPD. When patients continue to work through the central thematic question in various relationships and contexts, the therapist can provide a variety of useful interventions. These interventions include: empathetic and reflective listening, facilitating the development of affect-laden narratives, framing the central thematic question and core conflicts, exploring the patient's poorly integrated and conflicted feelings and attributions towards friends and relatives, and supporting autonomous motivation by emphasizing that it is the patient's choice whether or not to engage in such relationships, to engage in self-destructive behaviors, or to stay in the treatment and move on with his/her life. The idea of having a choice challenges conflicting self-attributions as a helpless victim or guilty perpetrator and proposes a third alternative as a strong, assertive, and autonomous person. The therapist by employing attribution techniques (including asking about alternative or opposing attributions and integrative questions) attempts to create a conscious conflict. The main transference during the second stage is ideal and maternal. The patient views the therapist as a caring, warm, and supportive person, but she/he is still worried about being suppressed, controlled, intruded upon, or abandoned.

**Stage III:** Focus on the central thematic question, "Am I worthwhile?" Working on a deep and rooted sense of "embedded badness." Challenging sustaining idealizations of self and others, mourning for what is being lost, being aware of their subjective interpretations, bringing their judgments closer to reality and abandoning the sick role, and facing adult responsibilities and realities are the main themes of this stage. Regressing to previous forms of coping strategies and relationships is common in the third stage, which is associated with worsening of symptoms. This regression is a manifestation of ambivalence about the process of treatment and recovery. Conflict and re-engagement in maladaptive or abusive relationships may occur. Suicidal and self-destructive behaviors become more common and the patient may return to maladaptive coping, such as drinking behaviors. One of the main duties of the therapist during the third stage is to bring the patient's ambivalence about the recovery into his/her consciousness, where it can be worked through and help the patient mourn for his or her actual loss. Typically, the transference shifts from a warm and nurturing maternal figure to a strong, moral, idealized paternal figure during this stage, sometimes with an erotic component.

**Stage IV:** Focus on the central thematic question "Am I ready to leave?" The therapist will find that patients who are in the fourth stage bring up themes of loss, rejection, and abandonment. Successful negotiation of the fourth stage involves moving towards a realistic view of self and other, as well as gaining a capacity to bear sadness and loss. Terminating the treatment as a sad loss, rather than abandonment, enables the patient to bear the experience of other losses in their life and reduces the fear of being abandoned. Learning to move away from idealized fantasies about self, learning to leave relationships without feeling rejected or abandoned, creating more realistic, integrated, and complex views about self and others, and building a capacity for a more authentic and fulfilling connections

are among the other goals of this stage. Patients still have to work on a deep-seated sense of badness, while trying to find their place in the world. One of the main goals of treatment during this stage is to help patients continue to mourn limitations, until they can move towards realistic self-esteem and balanced relationships, acknowledging and accepting their weaknesses and strengths. After the end of treatment, patients may be given the option of continuing to see the therapist on a monthly basis in order to maintain and solidify the gains that had made during the course of treatment.

## Results

In the current study, there were 15 participants in the experimental group and 15 participants in the control group entering the study. In the experimental group, there were 7 males (46.7%) and 8 females (53.3%). The mean and standard deviation (SD) of the ages of the experimental group were 28.066 and 5.721 years, respectively. Also, the participants of this group in regards to their educational level were as follows: 6 participants had a high school diploma (40%), 1 participants had an associate's degree (6.7%), 4 participants had bachelor's degrees (26.7%) and 4 participants had master's degrees (26.7%). The mean and SD of the ages of the control group were 26.600 and

6.853 respectively. In this group, the number of male and female participants was 5 (33.3%) and 10 (66.7%) respectively. Also, 6 (40%) participants of this group had high school diploma degrees, 5 participants had associate's degrees (33.3%), 2 had bachelor's degrees (13.3%), and 2 (13.3%) had master's degrees.

Twelve participants in the investigational group (80%) and thirteen participants in the control group (87%) completed the 9 months of the study. Table 1 shows the mean and SD for severity of BPD and depression of participants who completed the study according to the BEST and the PHQ-9 evaluated in four stages and separately reported by their groups.

**Table 1.** Four-step mean and SD of severity of borderline personality disorder and depression

variable	Group	Number	Pre-test		Third month		Sixth month		Post-test	
			Mean	SD	Mean	SD	Mean	SD	Mean	SD
Severity of disorder	Experimental	12	51.75	7.02	46.08	6.02	43.83	8.57	39.66	6.28
	Control	13	51.23	5.94	48.61	7.07	48.92	6.83	47.92	9.30
Borderline Depression	Experimental	12	19.83	3.45	19	3.46	17	4.47	14.08	4.50
	Control	12	19.15	3.57	18.46	4.44	19.23	4.02	19.15	4.54

Prior to running repeated measure ANOVA, its assumptions were first studied. The Kolmogorov-Smirnov test of normality was used to test the normal distribution of data. The results of this test indicated that the distribution of scores obtained for dependent variables in the pretest-posttest had a normal distribution ( $p > 0.05$ ). The results of the M Box test conducted to examine the covariance matrices seen for dependent variables showed that homogeneity

assumption of the variance-covariance matrix was observed and the covariance matrices observed in the two groups were equal ( $F_{(36, 1752)} = 1.166, p = 0.231$ ). In the next step, we used the findings of multivariable analysis of variance for the assumption of sphericity. The results of the test of Mauchly were not significant for the severity of the borderline personality disorder ( $p = 0.209$ ), suggesting confirmation of the above assumption, so there is no need to adjust the degree of

freedom in order to interpret the F test. But the findings of this test were significant for depression ( $P < 0.001$ ), which means that the present assumption does not apply to this component. Therefore, to investigate the effect of this assumption, the degree of freedom modification was used in analysis of variance. The results of the Greenhouse-Geisser test were significant for the within-subjects effects on the depression component in the interaction of time and group ( $F = 4.194$ ,  $p < 0.05$ ). Investigating the Levin's test on the equality of error variance shows that the assumption of equal variance is observed and the variance of the dependent variable error is equal in the groups as follows: The values obtained for the component of the severity of borderline

disorder were ( $F_{(1,23)} = 0.239$ ,  $p = 0.629$ ) in the pre-test stage, ( $F_{(1,23)} = 0.345$ ,  $p = 0.563$ ) in the third month, ( $F_{(1,23)} = 0.449$ ,  $p = 0.510$ ) in the sixth month, and ( $F_{(1,23)} = 1.378$ ,  $p = 0.253$ ) and in the posttest; and for depression component the values were as follows: ( $F_{(1,23)} = 0.281$ ,  $p = 0.601$ ) in the pre-test, ( $F_{(1,23)} = 1.332$ ,  $p = 0.260$ ) in the third month, ( $F_{(1,23)} = 0.50$ ,  $p = 0.825$ ) in the sixth month, and ( $F_{(1,23)} = 0.012$ ,  $p = 0.914$ ) in the posttest. Given the observance of assumptions, repeated measures of variance analysis (ANOVA) were used for data analysis. Table 2 shows that the effect of measuring time on the linear combination of components of severity of borderline personality disorder and depression was significant.

**Table 2.** The results of multivariate test to evaluate the significance of time effect and the interactive effect of time and group

Effect		Value	F	df	df (error)	Sig. level	Eta square	Observed power
				(hypothesis)				
Time	Wilk's Lambda	0.394	4.613	6	18	0.05*	0.606	0.929
Time and group	Wilk's Lambda	0.528	2.683	6	18	0.05*	0.472	0.853

\* Level of significance  $P \leq 0.05$

Findings of this analysis considering the F value and significance level indicate that the model was significant in examining the time and the interactive effects of time and group on the severity of borderline personality disorder and depression. In the next step, the significance of the whole model as well as the individual

effect of the independent variable on the dependent was considered. Table 3 presents that the effectiveness of DDP on the severity of borderline personality disorder during the 9 months and four stages of assessment has resulted in a significant change ( $p = 0.005$ ), but the change was not significant in depression ( $p = 0.314$ ).

**Table 3.** Results of repeated measures ANOVA for severity of BPD and depression in four stages of evaluation

	Variable	Sum of squares	df	Mean square	F	Sig. level	Eta Square	Observed power
Group	Severity of borderline disorder	368.001	1	368.001	6.206	0.05*	0.212	0.665
	Depression	57.731	1	57.731	1.702	0.205	0.069	0.240

\* Level of significance  $P \leq 0.05$



The mentioned differences were evaluated through Bonferroni post hoc analysis. The test results are presented in Table 4. Based on the results of Table 4 and the significant levels included in the severity of borderline personality disorder component, no significant difference was found between the pretest and the third month ( $p = 0.110$ ) and between the pretest and the sixth month stages ( $p = 0.072$ ), but there was a significant difference between pre-test and post-test ( $p$

$<0.05$ ). There was no significant difference in the depression between the pre-test stage and the third month ( $p = 1.000$ ) and between the pretest and the sixth month ( $p = 1.000$ ), but there was a significant difference between the pre-test and the post-test ( $p <0.05$ ). In addition, the mean scores of participants in the severity of borderline personality disorder and depression significantly decreased from pre-test to post-test (ninth month).

**Table 4.** The results of within-group Bonferroni post hoc analysis to compare the severity of BPD and depression

Variable	Time I	Time J	Mean difference (I-J)	Standard Error	Sig.
Severity of borderline disorder	Pre-test	Third month	4.141	1.631	0.110
		Sixth month	5.112	1.874	0.072
		Post-test	7.696	2.225	0.05*
Depression	Pre-test	Third month	0.763	0.603	1.000
		Sixth month	1.378	0.970	1.000
		Post-test	2.875	0.772	0.05*

\* Level of significance  $P \leq 0.05$

## Discussion

In line with the purpose of the research, which was to introduce an evidence-based therapeutic model for the treatment of patients in Iranian society with borderline personality disorder, the effectiveness of DDP was investigated. The results of this study indicated that the application of DDP during 9 months of treatment resulted in significant reduction of symptoms of borderline personality disorder and depression among the participants.

According to the research findings, DDP had a significant effect on the improvement of core symptoms of borderline personality disorder and depression among participants. Gregory et al. (24), Gregory et al. (27), Sachdeva et al. (37) and Gregory et al. (38) achieved similar results in their controlled trials of DDP in patients with BPD. The results of this study were consistent with Gregory and Sachdeva (25) work too. In

their study DDP had a significant and very large effect size on BPD symptoms and depression ( $d = 1.13$ ).

Also, the findings of this research were indirectly in line with the studied performed by Byrne and Egan (39) and Cristea et al. (40) demonstrating the effectiveness of psychodynamic psychotherapy on the symptoms of borderline personality disorder. A study by Goldman and Gregory (26) to identify the relationship between specific DDP techniques and treatment outcomes provides an explanation for the mechanism of DDP. In that study, it was found that association techniques were strongly and significantly correlated with improvement of symptoms. These techniques strongly influenced the improvement of core BPD symptoms and, moderately improved social support and heavy alcohol use. With these techniques, the therapist helps patients to recount narratives of recent interpersonal encounters and verbalize their emotional experiences. These techniques

are sometimes used in other psychodynamic models for the explicit purpose of developing insight toward maladaptive interpersonal patterns and correcting misunderstandings of others' intentions (17). In the DDP model, however, it is believed that the verbalization of emotional experiences in the form of narrative encounters can be therapeutic in itself because a hypothesized key deficit in BPD is the inability to label and sequence emotional experiences. Therefore, these techniques activate the association functions in the brain and reinforce a subjective sense of self.

In the study by Goldman and Gregory (26), attribution techniques were associated with a reduction in core symptoms of BPD and depression, as well as a decrease in institutional care. Attribution refers to attributing meaning to experiences. This ability is impaired in BPD individuals, as they use a dual system of logic to eliminate and leave out other perspectives that may cause ambiguity. Therefore, the BPD is characterized by polarized attributions about self and others that are poorly integrated. These techniques, by helping patients to simultaneously maintain opposing attributions in consciousness, allow patients not to see others merely in black and white over time, but rather they allow the patients to consider others' perspectives and to be able to tolerate opposing views.

Alterity techniques focus on the relationship between the patient and the therapist. They facilitate the creation of strong therapeutic alliance, support autonomous decision-making and authentic relatedness, and deconstruct maladaptive patterns of interaction. This set of techniques is strongly associated with the development of improved social functioning (26). Together, the repeated activation of the three neuro-affective functions of association, attribution and alterity through purposeful interventions leads to improvement in the pathology of BPD.

The results of the present study demonstrate that DDP can be an effective, feasible, and acceptable

therapy for patients with different cultures and languages. The dropout rate was low, indicating that the treatment model was well received by participants. Moreover, participants receiving DDP improved to a significantly greater extent than participants who received enhanced usual care. The present study represents a successful replication of the results obtained from DDP in prior studies. It also represents the first description of DDP in the Iranian scientific literature and the first evaluation of the acceptability, feasibility, and effectiveness of this treatment model in Iranian society.

One of the strengths of the present study was weekly clinical supervision that was carried out throughout the trial and assessment of adherence. Goldman and Gregory's study (41) indicated that adherence to DDP methods is strongly correlated with therapeutic outcome. This finding indicates the importance of full adherence to the DDP techniques and framework in order for the treatment to be effective.

Although the present study has several strengths, there are also important limitations. The small sample size and application of the treatment model by a single therapist make it difficult to generalize the results. Another limitation was the use of self-reporting instruments to assess outcomes and not relying on qualitative assessments. Given the research limitations, controlled trials with a larger sample size are needed to further evaluate the effectiveness of this therapeutic model for BPD in Iran, as well as to compare this therapeutic model with other evidence-based approaches. It is also suggested that quantitative-qualitative research projects be used in future studies. This study focuses on the introduction of DDP in Iran with pre-test and post-test measures. Therefore, it is recommended that follow-up studies be carried out in future studies. Finally, this study, by demonstrating the importance of applying evidence-based therapeutic

approaches for treating patients with BPD, can have theoretical and practical implications for therapists.

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