



The Applicability and Efficacy of Transdiagnostic Cognitive Behavior Therapy on Reducing Signs and Symptoms of Borderline Personality Disorder With Co-Occurring Emotional Disorders: A Pilot Study

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Abstract

Background: Borderline personality disorder (BPD), which is highlighted by emotional dysregulation and high rates of comorbid emotional disorders, is one of the most challenging clinical conditions for mental health services in different communities. The Unified protocol for the transdiagnostic treatment of emotional disorders (UP) was designed to target common vulnerabilities across emotional co-occurring disorders.

Objectives: The aim of the present study was to examine the preliminary efficacy of the UP in treatment of Iranian patients with BPD and comorbid emotional disorders.

Methods: By the purposeful sampling method, 6 participants (5 females and 1 male) with borderline personality disorder (BPD) and major depressive disorder (MDD), which met the inclusion criteria, participated in a multiple baseline experimental single case study. Each participant completed the borderline personality inventory (BPI) and difficulties in emotion regulation scale (DERS) during 3 baseline, 8 treatment modules, and 1 follow up assessment session. The unified protocol was carried out for 16 to 20 weekly sessions. Optical analysis and reliable change index (RCI) were used for determination of statistical significance. Remission rate was also applied to measure clinical significance.

Results: Results showed that the unified protocol (UP) was effective on reduction of BPD and depressive symptoms as well as increase of emotion regulation skills.

Conclusions: The efficacy of UP was statistically and clinically significant in most of the participants. Results from this study provide preliminary evidence for the efficacy of the UP in the treatment of BPD with co-occurring unipolar depressive disorders in Iran, and provide additional support for the transdiagnostic approach in the treatment of emotional disorders.

Keywords: Borderline Personality Disorder (BPD), Emotion Regulation, Transdiagnostic Cognitive Behavior Treatment (TCBT), Unified Protocol (UP)

1. Background

Borderline personality disorder (BPD) is a severe and debilitating psychiatric disorder and has been considered as one of the most controversial personality disorders, particularly in relation to its high clinical heterogeneity and comorbidity. Individuals with BPD engage in risky and potentially self-destructive actions, such as reckless driving and spending, unprotected sex (1), as well as eating problems, substance abuse, self-injury or suicidal gestures (2, 3). This disorder is associated with high rates of morbidity and mortality. Data indicates that up to 10% of those, who

meet the criteria for BPD finally commit suicide, this rate is 50 times higher than that observed in the general population (4). Thus, BPD is associated with extensive emotional and financial burdens to individuals, families, and the society. Linehan's biosocial theory of BPD (1993) is among the most accepted etiological models for borderline pathology (5). According to Linehan, a core feature of patients with BPD is emotional dysregulation and emotion dysregulation can lead to dysfunctional behavior cycles during emotionally challenging events (5).

Psychotherapy is the first-line treatment for BPD (6). Currently, 4 comprehensive, long-term psychother-

apies, including dialectical behavioral therapy, Schema-focused therapy, Transference-focused psychotherapy, and Mentalization-based treatment, have been shown efficacious in improving the signs and symptoms of BPD to some extent (5, 7-9). Regarding the fact that having access to these treatments for a long time is not possible for all patients, less intensive and costly forms of treatment need to be developed. Transdiagnostic treatments, such as unified protocol (UP), are designed for the full range of emotional disorders. This protocol emphasis on emotion regulation process and one of its main goals is to help patients learn to better understand their emotional experiences, in the other words, this program is attempts to help patients tolerate their “uncomfortable” emotions (10). Many researches have investigated the efficacy of this program in different conditions of axis I psychiatric disorders (11, 12) and it's efficacy has been confirmed in some review and meta-analysis studies (13-15). Although, limited research has been conducted in other cultures, such as the Iranian culture (16-18).

Because this treatment seems to be a good option for all disorders, in which emotion regulation process is an important factor, its applicability and effectiveness in borderline personality disorder (BPD) has been recently questioned and 2 official reports have been published in this regard. Lopez et al. evaluated the effectiveness of UP in 8 patients with BPD. Their results showed that some of participants (4/8) experienced less post-treatment symptoms associated with BPD, however, one of these patients returned to the baseline scores in follow-up. As a result, the overall borderline symptoms list (BSL) scores of the 3 patients decreased, 2 of whom achieved steady change, and 3 patients showed little recovery (5% to 16%), and one patient presented increased signs and symptoms. At the end of the treatment, most of the participants reported more stable feelings and confidence in their ability to effectively manage symptoms (19). Sauer-Zavala et al. also reported that among 5 participating patients, 4 patients showed decreased symptoms associated with BPD and comorbidities associated with anxiety and behavior disorders in the post-treatment period and had improved emotion regulation skills. The effect size for these changes was large. The researchers also suggested that this approach may be an effective approach for patients with BPD, who commit non-life-threatening acts (20).

2. Objectives

Since the unified protocol can be a cross-cultural treatment and due to limitations in treatment of people with BPD in all communities, in this study, the applicability and efficacy of the transdiagnostic cognitive behavior therapy

(unified protocol), as a short-term treatment for patients with BPD and comorbid emotional disorders, was investigated.

3. Materials and Methods

The current study had an experimental single-case design with multiple baselines. The Interventions were arranged based on simple repetition of A/B/C stages, with A being baseline and B an intervention, and the therapeutic intervention was terminated in the C-stage or follow-up. At these steps, therapeutic goals were measured repeatedly. Single subject designs are developed to fill the gap between research and practice in the field of psychotherapies assessment, permitting clinicians to elucidate the efficacy of psychotherapies in small samples in a cost-benefit and experimental manner (21). For appropriate efficacy, after treatment execution, therapeutic change must be observable in at least 3 subjects (21).

3.1. Sample and Sampling Method

The statistical population in the present study was patients with borderline personality disorder in Tehran. The given population comprised of patients that referred to 2 psychology clinics in Tehran city. Among the population of present study, 6 cases were selected, by purposeful sampling method and based on the inclusion/exclusion criteria, from the counselling center of Tehran University and a private psychological center. Inclusion criteria were: a) age of above 18, b) borderline personality disorder (BPD) based on psychiatric diagnostic interview by a psychiatrist and SCID-II by a clinical psychologist, and c) another emotional disorder as a comorbid disorder based on psychiatric diagnostic interview by a psychiatrist and SCID-I by a clinical psychologist. Exclusion criteria were: a) presence of diagnostic criteria for psychotic disorder/bipolar disorder/ drug abuse or dependency in the time of research, and c) risk of imminently suicidal attempt. In the case of drug therapy, patients could participate in the study 1 month after dose fixation. This research did not include patients with Benzodiazepines consumption (19) or involvement in any concurrent psychological treatment simultaneous to the present research. Finally, 6 patients were recruited and completed the treatment program and follow-up assessment.

3.2. Procedure

The patients were interviewed for axis II and I diagnoses by a psychiatrist. Again, psychiatrists-referred outpatients with BPD and comorbid disorder (depression for all patients in this study) were interviewed with SCID- I/II

by a clinical psychologist (the first author of this study) to meet the in/exclusion criteria, accurately. All 6 participants, including 5 females and 1 male, entered the baseline assessment phase, in 3 pairs, a week after each other. After assessing the 3 baseline records, the pairs entered 16 to 20 intervention sessions in the same order of baseline entrance. Two questionnaires (difficulties in emotion regulation scale and borderline personality inventory) were completed at baseline stages (3 times) and after each protocol's module (8 times), and follow up stage (1 time). After completion of 3 baseline measures, subjects went through the intervention stage (i.e. Unified Protocol), which lasted 16 to 20 sessions on a weekly basis (once a week). The length of treatment was tailored based on each patient. After the last treatment session and 1 month later, participants completed the given questionnaires and were interviewed with SCID-I/II by another clinical psychologist. This assessor did not contribute to the current study and was not aware of the purpose of this study. Informed consent was obtained from each patient and the university institutional review board approved all performed procedures.

3.3. Instruments

3.3.1. Borderline Personality Inventory (BPI)

The BPI is a 53-item scale, designed based on Kernberg's concept of borderline personality organization, and the DSM-IV diagnostic criteria for BPD. This scale includes factors for assessing identity confusion, primary defense mechanisms, damaged reality testing, and fear of intimacy. The BPI was prepared by Leichsenring to assess borderline personality traits in clinical and nonclinical samples with yes/no questions (22). The results of several studies have reported high internal consistency and test-retest reliability (Cronbach's alpha coefficient of 0.68 to for a sample of 484 participants and test-retest reliability of 0.73 to 0.89 for a sample of 484 participants). The sensitivity and specificity of this scale were 85% to 89%, and 78% to 89%, respectively. The standardization research by Mohammadzadeh and Rezaee in a sample of 411 participants in Iran showed that the extracted factors were identifiable in the Iranian society, and the correlation of all factors with the total scale was high (71% to 80%). Test-retest reliability coefficient in a 4-week interval, and internal consistency were 0.80 and 0.85, respectively (23).

3.3.2. Structured Clinical Interview for DSM-IV Disorders-II (SCID-II)

This tool is a semi-structured diagnostic interview that was developed by Spitzer, Gibbon and Williams to assess 10 personality disorders on Axis II based on DSM-IV and also passive-aggressive personality disorder (24). Previous

studies have shown the high reliability of this test. The Kappa coefficient was variant for patients (from 0.24 for patients with compulsive personality disorders to 0.74 for patients with histrionic personality disorders). However, Total Kappa was 0.53. Non-psychiatric patients had a considerably lower inter-rater agreement and total Kappa of 0.38 (24). The content validity of the translated version of the test was confirmed in Iran by Bakhtiari and the reliability of the test was 87% using the test-retest method, during a one-week interval (25).

3.3.3. Structured Clinical Interview for DSM-IV Disorders-I (SCID-I)

The SCID-I is a semi-structured interview developed by Spitzer, Gibbon and Williams (24). This tool is used to diagnose Axis I disorders according to DSM-IV criteria. The SCID-I is the gold standard diagnostic interview and has fair to good reliability. The reliability coefficient has been reported from 0.61 to 0.83 (26). Similarly, In Iran, a study by Sharifi et al. on 229 participants indicated that the acceptable diagnosis was fair or good for most of the diagnoses (terminal coefficient above 0.60). Accordingly, based on these results, the Persian version of SCID could be applied on the Iranian society (27).

3.3.4. Difficulties in Emotion Regulation Scale (DERS)

The difficulties in emotion regulation scale is a 36-item self-report measure developed as a multidimensional measure of emotion regulation to assess 6 dimensions of emotion regulation including non-acceptance, goals, impulse, strategies, clarity, and awareness (28). Participants were asked to rate items, with responses ranging from 1 to 5 points, based on how often the item applied to them (1 = almost never to 5 = almost always). The results of Gratz and Roemer study indicated that the internal consistency of this scale was high ($r = 0.93$) (28). However, In the Iranian sample, internal consistency of this scale using Cronbach's alpha for 6 subscales ranged from $r = 0.86$ to $r = 0.88$ and the one-week test-retest coefficient ranged from $r = 0.79$ to $r = 0.91$ (29). For the purposes of this research, DERS items were recoded so that higher scores in every case was considered as greater difficulties in emotion regulation (i.e., greater emotion dysregulation).

3.4. Intervention

The UP is an emotion-oriented cognitive-behavioral intervention that has been designed recently to address a range of psychological disorders characterized by emotion dysregulation process as a shared vulnerability (10). The UP consists of eight treatment modules, each module designed to target distress in response to strong negative

emotions/aversive reactions to emotions and maladaptive emotion-regulation strategies that intensify symptoms and subsequent avoidant behaviors. The first module was focused on motivation enhancement and exploring the costs and benefits of change. The second module was a psychoeducation about emotions. The adaptive nature of emotion and its components was emphasized. Patients in the third module learned to alter their cognitive reappraisals. This module was designed to increase cognitive flexibility in patients. The focus of the fourth and fifth modules were on prevention of emotional avoidance and modification of emotion-focused behaviors, although, the content of the sixth module was awareness and tolerance of emotion-related physical sensations. The seventh module was about interceptive and situational emotion exposures and the final module consisted of reviewing progress over treatment and detecting relapse prevention strategies (10). The treatment sessions were conducted by the first author of this paper. The therapist was a PhD student of clinical psychology and provided treatment under supervision of 2 advisor associate professors.

3.5. Statistical Analysis

In order to evaluate the efficacy of the transdiagnostic cognitive-behavior therapy (unified protocol) on borderline personality disorder symptoms and emotion dysregulation processes, the data were analyzed by visual analysis of results. Reliable change index (RCI) was applied to examine statistical significance (30). This index is used to determine whether the observed change in measures scores are significant based on reliability of the measures. Also, remission rate was applied to examine clinical significance (31). The remission rate formula was as follows, $\text{Remission rate} = [\text{baseline} - \text{post Therapy}] / \text{post Therapy}$. The magnitude of change was considered as follows: 0 to 33.3% was small, 33.4% to 66.7% was moderate and 66.8% to 100% was large. The DERS and BPI scores are also presented in Tables 1 and 2.

4. Results

4.1. Participant 1

A 23-year-old female referred with depression symptoms, including insomnia, loss of appetite, and anxiety caused by frequent preoccupation with thoughts of death and potential suicide. The signs and symptoms included high emotional change, dissociative symptoms, such as feeling of change and unfamiliarity with the environment, self-harmful behavior (picking the skin of fingers and starving oneself), and feeling chronic emptiness, fear of abandonment leading to great financial ransom, despite

the financial constraints. She was diagnosed with BPD and major depressive disorder and was under treatment with valproic acid, sertraline, and quetiapine, and entered the baseline after the dose was established. At the time of the study, she had regular sleep and her appetite was normal. She was very cooperative and followed the treatment with interest. The patient reported 77% remission in the final stage of treatment that showed great progress; although this amount was reduced to 50% in the follow-up period, it still shows moderate improvements in her signs and symptoms. The DERS results also showed that the patient achieved 25% progress in skills related to emotional regulation at the end of treatment that possibly plays a role in improving signs and symptoms associated with her borderline personality.

4.2. Participant 2

A 25-year-old single female, who lived alone in Tehran and had limited relationship with her family. She was working in a trading company and referred to the clinic for problematic close relations. She had been involved in multiple relations since her teenage years that were often finished by friends. She gave many ransoms and tried to maintain friends with sexual relationships. Once, she also attempted suicide after emotional breakdown and was hospitalized. She reported occasional uncontrollable emotions, especially after failure, and became aggressive, and irritable, sometimes yelled and beaten her friends and punched her head. Recently, she attempted overeating and then tried vomiting twice. She currently has a close friend and hopes to marry him. In addition, she is connected with 2 of the company's customers and has sexual affairs with one of them, as well. She reported that she sometimes becomes engaged in unforeseen sexual relationships and their relationships are unprotected. Now, she is very gloomy, because of recent problems with her friend, has irregular night sleep, cries at nights, and blames herself. First, she doubted participation in the study, she was concerned about the research nature. Also, in the initial meetings, she sought to ensure meeting her therapist's expectations in her remarks that were based on the content and treatment stage. At the end of the meetings, the patient cut her relationship with the customers by increasing her insight towards her maladaptive behavioral strategies, although she remained in the humiliating relationship with her boyfriend. Also, her emotional overeating behaviors was discontinued and aggressive behaviors decreased. She experienced 66% remission in the post-treatment assessment. Although in the follow-up assessment, she reported unwanted pregnancy that had caused her great anxiety. At this stage, the remission rate in BPI and DERS were 0.41 and 0.09, respectively.

Table 1. Results of Repetitive Measurement of Difficulties in Emotion Regulation Scale

DERS	Participant 1	Participant 2	Participant 3	Participant 4	Participant 5	Participant 6
Baselines Mean	119/33	115/66	114/33	115/33	126	124/33
Baselines Standard Deviation (SD)	(5/13)	(4/04)	(1/15)	(3/51)	(6/55)	(1/52)
Treatment Mean	103/3	104	74	101/3	107/8	111/3
Treatment Standard Deviation (SD)	(7/8)	(16/1)	(19)	(21/3)	(13/6)	(10/7)
Treatment Remission Rate	0/19	0/09	0/47	0/28	0/23	0/24
Follow-up Remission Rate	0/15	-0/01	0/43	0/25	0/01	0/14
Reliable Change Index (RCI)	7/9	-	18/9	9/96	4/81	6/18

Table 2. Results of Repetitive Measurement of BPI

BPI	Participant 1	Participant 2	Participant 3	Participant 4	Participant 5	Participant 6
Baselines Mean	33	39	23	23/33	26	28
Baselines Standard Deviation (SD)	(3/6)	(4)	(1/73)	(2/08)	(6/55)	(1/73)
Treatment Mean	20/5	28/3	7	18	17/12	18/25
Treatment Standard Deviation (SD)	(9/9)	(9/02)	(6/8)	(7/7)	(6/08)	(5/23)
Treatment Remission Rate	0/77	0/66	0/100	0/66	0/35	0/66
Follow-up Remission Rate	0/50	0/41	0/100	0/25	-0/45	0/33
Reliable Change Index (RCI)	4/3	3/9	5/36	1/46	-	2/43

4.3. Participant 3

A 20-year-old male, a student of social work, referred because of instability in emotions and problematic relationship with his girlfriend that was his first close relationship. He experienced symptoms of depression, because his girlfriend threatened to cut ties with him. He injured himself several times after an argument with his friend, with cuts on his chest or wrist. He is very interested in driving fast and drove since his adolescence and before having a license. He had history of high-speed drink driving. He spent most of his time with friends, and complained of emotional instability and instability in decisions. He likes to attract other's attention. Although he was willing to participate in treatment sessions and regularly attended meetings, he did not have the necessary cooperation in pencil and paper tasks, as a result, a part of sessions was devoted to addressing these assignments. After attending therapy sessions, he experienced a gentle slope and a constant reduction in symptoms (e.g. after 5 weeks of starting treatment his hazardous behavior decreased). The extent of this reduction until the end of treatment, especially after the emotional avoidance module, included behaviors, which were not classified as treatment goals, such as quitting smoking and alcohol withdrawal. In the post-treatment and follow-up period, the patient reported no

symptoms associated with BPD and 100% progress and recovery in post-treatment and follow-up was observed. He also reported the highest rate of recovery among participants in DERS: 47% improvement after treatment and 43% at follow-up. This rate of change could be effective in reducing the signs and symptoms associated with his disorder.

4.4. Participant 4

A 25-year-old unmarried female referred because of problems in her relationship and symptoms of major depressive disorder. She complained of the inability to manage her relations and referred to frequent problems with her friends, so that she demanded repetitious meetings and telephone calls with them, yet the quality of the relationship was contested by her friends and their families and in some cases ended with the intervention of security guards and experts at the university counseling center. In the first academic semester, she did not attend the exams for the same reason. She always likes to attract attention of her friends and sometimes tells them that she suffers from a serious illness. In late teens, she attempted suicide with pills and had a history of self-mutilation with cigarettes and knives. She has ambivalent feelings in relationship with boys that is associated with her unformed identity, a history of sexual abuse during childhood, and not know-

ing, which gender she is interested in. At first, it was difficult for her to trust the treatment environment. Because of academic anxiety and family stress, several sessions were dedicated to recognition of her feelings and naming her emotions. Therefore, this patient had the longest treatment duration (20 sessions). At the end of the treatment, she reported 66% recovery that was reduced at follow-up due to high family stresses. Her remission rate at this stage was 25%, which was not statistically different, compared to pre-treatment ($RCI = 1.46$). The results of DERS showed 28% improvement in the post-treatment and 25% in follow-up period.

4.5. Participant 5

This participant was a 21-year-old student of philosophy, who had changed her study course twice due to lack of interest. She referred because of emotional instability. She was pre-occupied with religious issues and was concerned that the interest of her friends could strongly alter her favorites. She failed repeatedly in intimate relationships, which caused failing of 2 semesters. When frustrated, she angrily attacked others physically and had beaten them. She was facing her ex-partner's opposition to resume the relationship and was experiencing symptoms of depression. She had the least level of cooperation among participants for treatment. She was sometimes absent in sessions without prior notification or did not do her homework. In addition, in the sessions she talked little about her relationship and talked about it after self-mutilation attempts with cigarettes. The protocol lasted 16 sessions. This patient had the lowest rate of remission in treatment (35%). In follow-up phase, the patient reported increased symptoms than baseline and interpersonal conflicts and disciplinary problems were troubled her. However, the patient had 21% improvement in DERS in post-treatment phase, and regressed to baseline level at follow-up.

4.6. Participant 6

A 22-year-old patient, the first child of the family, referred due to the concerns of attraction to middle-aged men. Young men were not attractive to her and she considered fear of dependency and abandonment as the reason of unwillingness for relationships. Her close friend had recently graduated and left the dormitory. She felt that she had failed in intimate relationships with friends, because she had lost many of her favorite friends. However, when she got involved in an intimate relationship, she felt trapped and that she should cut it out, but she generally tried to maintain her relationships. She had feelings of emptiness for a long time. She considered traditional customs very ridiculous, had no sense of belonging to any

place, and did not really know who she is. In addition, she did not feel good about her secondary sexual characteristics. She experienced intense excitement and normally reported emotional shifts from the normal state to anger and sadness that sometimes got beyond its exterior reason. After treatment, she was fully aware of her relationship with friends and knew how to avoid jeopardizing the relationship. By starting the topic of emotional avoidance and behaviors in module 5, she discussed about marriage avoidance despite insistence of her family. What she, at first, considered fear of dependence, infidelity in marriage, and unsustainability in relationship concerns, was associated with serious identity confusion at the end. Feminine feelings, female features, and roles were disgusting for her. These feelings persisted through the end of treatment and follow-up. This protocol was carried out during 4 months (16 sessions). At the end of treatment, she reported 66% remission and 33% at the end of the follow-up period. The rate of improvement in DERS was 24% in pre-treatment and 14% in the follow-up phase.

The overall remission rate of the participants based on the BPI was 0.68 at the end of treatment and 0.34 in the follow-up phase. Reliable change index ($RCI = 5.78$) showed that the remission rate was statistically significant. As it could be seen in [Table 1](#), all patients had increased emotion regulation skills, while all of these changes were little and lower than moderate in all participants. The percentage of overall remission was 25% in the post-treatment and 16% in the follow-up phase. Reliable change index showed that the rate of change was statistically significant and the changes observed in follow-up scores was not accidental, with 95% confidence. All patients underwent SCHID-I and SCHID-II by another clinical psychologist at the end of the treatment process and were evaluated for major depressive disorder and BPD. None of the patients met the diagnostic criteria for major depressive disorder in the post-treatment, and participant 1 and 5 were in the subclinical condition. In the follow-up, two patients (participant 4 and 5) had the diagnostic criteria of major depressive disorder, 3 patients (participant 1 to 2 and 6) were below the threshold, and 3 participants reported no symptoms in this regard.

5. Discussion

The research achievements on the basis of Ingram, Hayes and Scott's efficacy criteria were as follows (32):

Magnitude of change (to what extent, change occurred in treatment of major objectives): The most important criterion for determining the effectiveness of the treatment is to reduce symptoms. In this study, all 6 patients showed reduction in BPI scores in the post-treatment stage, although

this reduction of symptoms was experienced at varying degrees. At the end of the treatment, patients could identify and label their emotions, and find the thoughts associated with them. Also, they were able to identify the consequences related to risky behaviors. At the end of the follow-up phase, 4 out of 6 patients had stable changes (clinically significant change). Among participants, patient 3 reported no symptoms associated with BPD at the end of the treatment and met no BPD criteria based on SCHID-II; this improvement was maintained on the follow-up. As it seems that patients responded honestly to questionnaires, a good therapeutic alliance and the absence of dissociative symptoms and childhood traumatic experiences may influence treatment outcomes, as Kleindienst et al. and Barnicot et al. also cited them as good prognostic factors in BPD treatment (33, 34). Also, contrary to some researchers, who believe that male gender predicts poor treatment outcomes, the male patient in the present research experienced the greatest improvement. In addition, what distinguished this participant from others was less traumatic experiences in childhood, compared with other participants, who had troubled relationships with their family or reported memories of multiple sexual, physical and emotional abuse. Patient 3 had no report of such traumatic experiences during treatment, lived with his family, and had more organized family conditions than others. Patient 4 also met none of the criteria for BPD based on SCHID -II at the end of treatment. However, this trend did not continue and signs and symptoms increased after family problems. The other 4 participants had the diagnostic criteria for BPD in all phases of the research. Patient 5, who had the lowest recovery rate in the post-treatment, experienced more signs and symptoms at follow up than the start of the treatment and had serious disciplinary problems due to violation of academic rules. This patient had insufficient cooperation with treatment and often refused to talk about his emotional breakdown. In addition, she often did not do her homework between sessions that could question her commitment to the treatment and its content. She participated irregularly in therapy sessions. Unexpected absences and demand for additional sessions were behavioral manipulations that was experienced only with this patient during the research. Overall, 68% of patients had overall remission rate at the end of treatment. Although this amount was reduced in the follow-up period, the results showed 34% improvement. The results of the researches by Lopez et al. and Sauer-Zavala et al. also showed that more than half of patients with BPD had clinically meaningful reduction in their signs and symptoms at the end of UP (19, 20). Because axis-I comorbid disorders are usually affected by patients' pathology in axis II, reduced interpersonal problems and improved problem-

solving skills in further crises during treatment were very effective in improving symptoms of depressive disorder. The results showed that none of the patients in the post-treatment phase met the criteria for MDD (co-morbid disorder). This condition lasted in the follow-up period for more than half of the patients. These findings are consistent with other studies reporting efficacy of this treatment in clinical remission for secondary diagnosis in patients with co-occurrence disorders (11, 12, 19, 20, 35). The investigation of variability of emotion dysregulation process, which is considered one of the most important factors affecting development and maintenance of this disorder, was another objective of this study. The results showed that patients, after completion of the intervention, had a significant decrease in DERS scores. The majority of participants had clinically significant changes during follow-up (overall remission rate: 0.16), although this change was less than average. Since the UP specifically deals with the skills and techniques associated with emotional regulation process, reduced emotional dysregulation may affect the reduced severity of specific symptoms and co-morbid disorder of patients. These findings are consistent with other studies reporting efficacy of this treatment in increasing emotion regulation skills (16, 17, 19, 20).

Universality of change (what percentage did change and what percentage did not?) The results showed that signs and symptoms had reduced in all 6 patients at the end of the treatment process and in 5 patients in follow-up than the baseline stage. While Lopez et al. believed that UP could target borderline symptoms, such as emptiness and identity disturbance (19), based on the researchers of the present study, these issues need precise investigations. In this study, clinical observation showed that most participants, who report dissociative experiences, identity disturbances, and chronic feelings of emptiness at the beginning assessment, point to them at the end of the treatment as well. Also, patients with BPD occasionally used statements for describing their physical status that were hardly understandable when compared with other patients with emotional disorder, like "all my body cells boil"; this situation worsens when physical feelings are associated with dissociative experiences. These conditions could be complicating for the therapist in module 6.

Generality of Change: The results of assessments showed that most patients acquired good insight of their automatic thoughts and core beliefs and could conceive their maladaptive behaviors and its consequences. Although Sauer-zavala et al. and Lopez et al. did not mention increase or decrease in harmful behavior (19, 20), 5 patients in the present study had harmful behavior as mentioned previously. During the treatment, according to the crises experienced by patient 5, she attempted skin burn-

ing with cigarettes. During the treatment, 2 patients reported no harmful behavior (participant 3 and 4). Two patients (participant 1 and 2) reported harmful behavior, like self-mutilation, and starving, which resolved at the end of therapy and follow-up period. Symptoms, such as identity disturbance and dissociative symptoms reported by three patients (participant 1, 4 and 6) at the beginning of treatment, remained unchanged.

Acceptability rate (to what extent did people participate in the treatment process and complete it?): In the present study, all participants in the baseline assessment had completed the treatment protocol and had referred for follow-up. The duration of treatment course was tailored for every patient (16 to 20 treatment sessions).

Safety (Was the participants' mental and physical health reduced due to treatment?) The results of the present study showed improvement of most clinical variables in the majority of patients, although interpersonal differences between patients could be observable. Among the participants, only one patient reported symptoms more than baseline, which did not seem to be due to the intervention side effects.

Stability in therapeutic achievement: The follow-up period in this research was 4 weeks, which showed decrease in almost all treatment results; despite the reduction in many cases, the results improved, compared to the pre-treatment phase. It seems that regarding the specific vulnerability of patients with BPD towards environmental crisis, increasing the number of sessions could have a fundamental role in stability of results.

5.1. Conclusions

Transdiagnostic approaches to treatment are now accepted in treatment situations, because of advantages on specific diagnostic protocols (14, 36, 37). Furthermore, UP simultaneously targets common vulnerability of emotional disorders and can be an alternative for patients, who are particularly affected by several concurrent disorders (36, 38, 39). The findings of the current study are the first evidence of the applicability and efficacy of this treatment in patients with BPD in the Iranian society. Most of participants had better feeling in dealing with their emotions at the end of therapy. Some participants, showed reduced signs of BPD. It seems that this treatment could be a complementary treatment for patients with BPD, especially when a co-morbid emotional disorder complicates the patient's condition. Although further research is necessary.

5.2. Limitation

Generalizability of the results of the current research is limited due to the clinical conditions of patients and ethi-

cal limitations of the possibility to increase baseline assessments that caused participants to enter the treatment with unstable baseline scores that made the conclusion difficult. The sample size was small and the demographic variations was limited. In addition, only 1 participant was male and conclusion on the possible effect of gender on treatment response requires further research. Furthermore, the follow-up period was limited to 1 month and the participants' process of changing signs was not clear after that. It is suggested that future research will add to the results of their research by removing these restrictions.

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Footnotes

Authors' Contribution: Farzaneh Mohammadi, Maryam Bakhtiari, Abbas Masjedi Arani and Behrooz Dolatshahi conceived and designed the study. Farzaneh Mohammadi collected the data, interpreted them, performed the statistical analysis, and drafted the manuscript. Maryam Bakhtiari and Behrooz Dolatshahi revised the manuscript critically for important intellectual content. Mojtaba Habibi interpreted the data and performed parts of the statistical analysis. All authors read and approved the final manuscript.

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