

## The Effectiveness of Group Dialectical Behavior Therapy on Emotional Regulation and Rumination in Girls with Traumatic Experience

Farideh Ghavasi, Iman Akbarzadeh, Benyamin Siran Hesari, Jamal Shams, Rasoul Mohammadian Ghezalghabr, Mahdi Fatemizadeh<sup>1\*</sup>

1. Islamic Azad University of Bojnurd, Department of Psychology, North Khorasan, Iran,
  2. Department of Chemical and Petroleum Engineering, Biotechnology Research Center, Sharif University of Technology, Tehran, Iran.
  3. Department of English Language, Faculty of Teaching English as a Foreign Language, Imam Reza International University, Mashhad, Iran.
  4. Applied Behavioral Sciences Research Center & Department of Psychiatry, Shahid Beheshti University of Medical Sciences, Tehran, Ira.
  5. Department of Clinical Psychology, Faculty of Medicine, Shahid Beheshti University of Medical Sciences, Tehran, Iran.
  6. Department of Clinical Psychology, Taleghani Educational Hospital, Faculty of Medicine, Shahid Beheshti University of Medical Sciences, Tehran, Iran.
- (\*Corresponding Author: Mahdi Fatemizadeh, Email: farideh.ghavasi@gmail.com)

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### Abstract

**Introduction:** The aim of this study was to evaluate the efficacy of group dialectical behavior therapy on emotional regulation and rumination among female students with traumatic experiences. The traumatic experiences among teenagers and young females have various negative impacts on their future life.

**Methods:** With reference to the Counseling Center of Education Ministry of Mashhad City. 24 female students with traumatic symptoms were selected in this quasi-experimental study to participate in this study. They were assigned randomly into control and experimental groups using the traumatic events questionnaire and the Structured Clinical Interview (SCID). In the pre-test, post-test and two-month follow-up, the difficulties in Emotion Regulation Scale of Gratz and Roemer (DERS) was conducted. The experimental participants spent 14 sessions of group dialectical behavior therapy.

**Results:** The results demonstrated that there were a significant difference between mean scores of emotional regulation difficulties in girls with traumatic experiences who received group dialectical behavior therapy and the mean scores of emotional regulation difficulties in girls with traumatic experiences who did not receive the intervention ( $P < 0.05$ ).

**Conclusion:** With the impact of dialectical behavior group therapy on the cognitive and emotional aspects of female participants with traumatic experiences, students were able to increase their emotional regulation and manage rumination.

**Declaration of Interest:** None

**Key words:** Dialectical behavior therapy, Rumination, Emotion regulation, Traumatic experiences.

### Introduction

Humans need to control their emotions. Inability to control emotions can lead to anxiety and psychological problems(1).

Recently, weak emotional regulation has been considered as a common factor associated with different forms of psychological problems (2). Existing literature have suggested a strong

relationship between emotional regulation and post-traumatic stress disorder (PTSD) (3). Therefore, emotional regulation has been defined as an attempt to manage the emotions that a person may experience, and the way he/she experience and express these emotions (3). Research shows that group therapy for emotional regulation has a positive impact on reducing harms to traumatic symptoms, lack of emotional regulation in patients (4, 5) and decreased symptoms of depression, anxiety and stress (6). Investigation of studies emphasizes the effectiveness of therapeutic approaches with reducing symptoms of stress and traumatic symptoms (7). One of these therapeutic approaches is dialectical behavior therapy (DBT) approach. This therapeutic approach has been derived from the Buddhist philosophy, integrated with scientifically valid treatments. It was developed for the first time by Linehan in 1993 to help patients with the borderline personality disorder, and its effectiveness has been enhanced increasingly. Furthermore, it is applied for the integrated treatment of people who are under psychological care due to other mental disorders (8).

Dialectical behavior therapy (DBT) is the first valid experimental treatment for chronic pro-suicide patients with borderline personality disorder (BPD). Numerous researches have examined the effectiveness of this therapy for adults with BPD. The results suggest that DBT is effective in reducing self-harming and suicidal behaviors. Moreover, other studies have indicated that DBT is effective in reducing a variety of behavioral problems in a wide variety of medical disorders in adults. In the past decade, various studies were conducted regarding DBT for adolescents with mental and behavioral disorders, including borderline personality disorder (BPD), eating disorders, suicidal behaviors, outsourcing behaviors and self-harming behaviors. The findings support the effectiveness of DBT in treating adolescents with borderline personality disorder (BPD), depression with suicidal thoughts, bipolar disorder, eating disorder, compulsive behavior and aggressive behavior which is also confirmed experimentally (9).

DBT involving skills is based on dialectical and bio-sociological view on borderline personality disorder (10). It means that the biological resolutions regarding emotional instability may cause emotional malfunctions and dysregulations in people (11), and this emotional deregulation could affect behavioral, emotional, cognitive, interpersonal, and identity functions. Based on this biological-social perspective, emotional-behavioral problems that people reflect as disorders such as anxiety and stress are the result of interaction between biological characteristics and discrediting environment. Three characteristics are shared among people with emotional vulnerability that include high emotional sensitivity, severe emotional reactivity and slow return to equilibrium line (12).

Standard Dialectical Behavior Therapy is composed of four types of interventions: 1) structured group therapy sessions, 2) individual sessions 3) consultation to reduce suicidal behavior (patients with BPD) and to ensure the generalization of skills outside of therapy sessions and 4) personal meetings of expert teams to support DBT therapists (13). In the group dialectical behavior therapy (GDBT), participants learn applied skills in the field of mindfulness, interpersonal effectiveness, emotion regulation, and distress tolerance in weekly meetings that involves both therapists and six to ten participants (14). The results of Steil (15) expressed that DBT can be effective in PTSD patients with increasing skills related to increased acceptance of life elements that they cannot change (basic acceptance) and increased non-judgmental awareness and control of concentration (mindfulness), better tolerance of pain (distress tolerance), performing opposite tendency of depression (opposite action) and enhanced interpersonal effectiveness. Considering the effectiveness of dialectical behavior therapy, Neacsiu and his colleagues examined the effectiveness of DBT on emotional dysfunction in mood and anxiety patients. By executing a 16-week DBT group therapy on 44 adults with depression and anxiety disorder without borderline personality disorder symptoms, they concluded that DBT

reduces the emotional and anxiety dysfunction. After two months of follow-up, reduction in scores of dysregulation emotional scale (DERS) in the GDBT was maintained. In addition, they reported lower anxiety scores than their counterparts in the control group (16). Results of Bagge and his colleagues (17) also showed that the subjects with borderline personality disorder who participated in emotional regulation group therapy sessions were more able to identify their emotional problems and instabilities and showed more resistance against their tendency toward self-harming.

Soler (10) compared the effectiveness of the dialectical behavior group therapy with the standard treatment group on patients with the borderline personality disorder. Results showed fewer withdrawal of participants from group therapy than those in the standard treatment group. In addition, dialectical behavior group therapy compared to standard treatment group was effective in improving stress, anxiety, irritability, anger and emotional instability. In the use of DBT in cases other than the borderline personality disorder (BPD disease), it seems that the use of therapeutic intervention of group therapy has higher advantage such as cost-effectiveness, therapists will have more opportunities to observe subjects' interactional behaviors, and participants also interact with another group of people and the credit building environment can be healing. In addition, participants will have the opportunity to learn with each other. As a result, the treatment will be effective. Finally, groups will weaken the intense personal relationships between subjects and the therapist (18).

Studies show that traumatic experiences rate among teenagers is increasing and trauma can cause problems in academic, behavioral, social and emotional performance of teenagers (19, 20).

By considering the previous statements and the role of emotion regulation in handling PTSD, it seems that emotional regulation skills in adolescence prevent many psychological and sociological problems. Therefore, investigating new therapeutic approaches seems to be necessary to make effective

interventions in the prevention and treatment of PTSD creation and relapse.

With regard to the growing trend of PTSD in adolescent girls and the suitability of adolescent population to investigate the effectiveness of new cognitive-behavioral approaches (in terms of appropriate cognitive level and more acceptance compared to the new therapeutic approaches) and the importance of emotion regulation strategies in many clinical studies and with regard to the role of emotion regulation in creation of psychological disorders, recent research was conducted with the aim of studying the effectiveness of the GDBT on emotional regulation in girls with traumatic experiences.

### Method

The study was an experimental study since the researcher aims to find the effect of the independent variable of dialectical behavior therapy on emotional regulation of girls with traumatic experiences. The statistical research population included all the young girls with traumatic experiences studying in the academic year 2015-2016 in high schools of Mashhad City.

The targeted sampling method was used and a request was sent to high school consultants for referral of female students studying in the second and third grades and suspected of PTSD. Referred students were investigated by traumatic events questionnaires and among those students whose trauma experiences score was moderate and severe (higher than 15), 24 students were selected by meeting the diagnostic traumatic symptoms based on the structured diagnostic interview (SCID) and they were included randomly in two control and experimental groups. The criteria of the study included: 15 to 18 year age range, lack of psychotic disorders, post-traumatic stress disorder based on the diagnostic structured interview (SCID), lack of receiving any pharmacological and psychological and social intervention in trauma symptoms in the past and at the time of the study. Experimental group subjects participated in the group dialectical behavior therapy sessions (including 14, 120-minute sessions once a week). To measure the emotional regulation,

The Difficulties in Emotion Regulation scale of Gratz and Roemer (DERS) (5) was used in the pre-test, post-test, and two-month follow-up stages.

### Materials

**Traumatic events questionnaire:** Traumatic events questionnaire is consisted of 23 self-reporting items to assess the traumatic experiences that a person may have during life such as driving trauma, rape trauma, and fight trauma. The questionnaire contains 23 yes and no questions. The traumatic events questionnaire has Cronbach's alpha 0.89. This questionnaire also has a significant correlation with the stress life events Holmes-Rahe inventory (0.85) (21).

**Difficulties in Emotion Regulation Scale by Gratz and Roemer (DERS):** Difficulties in Emotion Regulation Scale is a 36-item self-reporting assessment tool developed to clinically assess the emotional regulation difficulties. The range of responses is 1 to 5 Likert Scale. One means almost never (0-10%), two means sometimes (11% to 35%), three means half the time (36 to 65 percent), four means most of the time (66 to 90 percent) and five means almost always (91 to 100%). Research results suggest that this scale has high internal consistency 0.93. All six subscales of DEARS have high Cronbach's alpha 0.80. DEARS also has a significant correlation with NMR scale and acceptance and action questionnaire (5). Based on data from Azizi Cronbach's alpha of this questionnaire was calculated 0.92(22). This scale measures various aspects of emotional dysregulation. Higher scores mean more difficulties in regulating emotions. The scale has a general of total scores of all questions and six scores are related to the subscales. Six subscales including the denial of emotional responses, difficulties in carrying out a purposeful behavior, difficulties in impulse control, lack of emotional awareness, limited

access to emotional regulation strategies, lack of emotional clarity (5).

**Structured Clinical Interview for Disorders Axis I and II in DSM-IV (SCID):** This checklist is a tool for diagnosis which is based on the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (23). Implementation of this interview requires the clinical judgment of interviewer on interviewee's answers. Studying the validity of this interview was carried out in the Iranian population on 299 patients who had referred to outpatient clinics or hospitalized in three psychiatric centers in Tehran. For all diagnoses, Kappa coefficient was higher than 0.40. If we consider diagnoses provided by psychiatrists as the golden standard, feature results have been better than sensitivity results. In most of the diagnoses, the feature was above 0.85, and in half of them, it was higher than 0.90 indicating desired feature (24). In the current study, the clinical version of this test was used for the diagnosis of post-traumatic stress disorder and rejecting anxiety disorder, psychotic disorders, and borderline personality disorder.

**Rumination Response Scale (RRS):** This self-report scale was made by Nollen-Hoeksma and Moro in 1991. There are 22 Likert questions that are quoted on a 4-point scale from 1 (almost never) to 4 (almost always) (25). This scale shows how much the participant is involved in every thought or ruminative behavior. Scores can range from 22 to 88. This questionnaire was reviewed by Mansouri in Iran and its validity has been confirmed. The Cronbach's alpha in Mansouri's research was 0.90 (26). This questionnaire was translated into Farsi by Bagherinezhad, Salehi fadardi, and Tabataba'i. Its validity in the Iranian sample was reported through the Cronbach's alpha coefficient and as an index of internal consistency of 0.88 (27).

Results

In this section, by using the descriptive statistics indicators, It is described the pretest and posttest and follow-up scores of the experimental group and the control group. Tables 1 and 2 show the mean and standard deviation of the score and emotional regulation difficulties and rumination for girls with traumatic experiences in both experimental and control groups in the pre-test, post-test and

follow-up stages test revealed that the sphericity precondition is established ( $\chi^2=4.84$ ,  $W=0.87$ ,  $P=0.08$ ). Besides, both groups represented equal variance ( $p>0.5$ ) in all three times in which the measurement was obtained. The results demonstrated that the effect of time is significant ( $f=12.61$ ,  $P<0.05$ ) and the mutual effect of time and group is significant ( $f=18.64$ ,  $P<0.05$ )

Table 1- Descriptive indicators of traumatic experiences scores of PTSD participants in pretest, posttest, and follow-up

Variables	Situation	Grouping	N	Mean	SD
Rumination	Pre-test	experimental group	12	45.87	5.58
		Control group	12	47.31	6.01
	Post-test	experimental group	12	28.30	9.02
		Control group	12	37.17	13.9
	Follow-up	experimental group	12	21.15	9.78
		Control group	12	41.32	8.2

Table 2: Descriptive indicators of emotional regulation difficulties scores for PTSD participants in pretest, posttest, and follow-up

Variables	Situation	Grouping	N	Mean	SD
Rumination	Pre-test	experimental group	12	116.5	19.3
		Control group	12	110.43	22.91
	Post-test	experimental group	12	112.8	21.59
		Control group	12	99.03	25.4
	Follow-up	experimental group	12	112.1	20.18
		Control group	12	97.3	20.8

According to Table 3 and 4, the following hypothesis is examined: There is a significant difference between the mean scores of emotional regulation and rumination in girls with traumatic experiences who received the group dialectical behavior therapy in addition to the mean scores of emotional regulation and rumination in girls

with traumatic experiences who did not receive the intervention. Rumination: Based on assumptions investigated in rumination variable, it was revealed that the data represent normal distribution ( $p>0.05$ ). M-box test showed that covariance matrix of the dependent variable was equal between the groups ( $p=0.37$ ,  $f=1.08$ ). Moreover, the results of the Mauchly

Table 3: Results of variance analysis with repeated measures to investigate changes in Rumination in PTSD participants

Variable	Source	SS	MS	DF1	DF2	F	p	Eta
Rumination	Time	1858.31	929.15	2	44	12.61	0.039*	0.17
	Time*group	957.61	644.75	2	44	18.64	0.028*	0.32

Difficulties in Emotion Regulation: Investigating assumptions in emotion regulation variable revealed that there is a normal distribution in data ( $p>0.05$ ). M-box

test showed that the covariance matrix of the dependent variable was equal between groups ( $f=4.86$ ,  $p=0.61$ ). Also, the results of Mauchly's test showed that sphericity precondition is not established ( $\chi^2=0.653$ ,

W=0.657, P<0.001). Hence, the Greenhouse-Geisser static was reported. In all three measurements, there was an equal variance in both groups (p>0.5). The results showed that time effect is significant (f=3.98, P<0.05) and the mutual effect of time and group is significant (f=5.13, P<0.05)

As shown in table 3 and 4, the results of the variance analysis test with repeated measurements to investigate the effectiveness

Table 4: Results of variance analysis with repeated measurements to investigate changes in emotion regulation difficulty in PTSD participants

Variable	Source	SS	MS	DF1	DF2	F	P	Eta
Emotion regulation difficulty	Time	1074.13	552.01	2	44	3.98	0.013*	0.17
	Time*group	53.22	27.16	2	44	5.13	0.012*	0.014

As shown in the Table 5 and also according to descriptive table 2, the mean score of experimental group participants from pre-test to post-test was significantly reduced which was the effect of group dialectical behavior therapy from pre-test to the post-test stage in the experimental group. This finding indicates that group dialectical behavior therapy had a

of group dialectical behavior therapy, the emotional regulation difficulty changes and the subscales indicate that and the petty difficulty scale changes indicate that in emotional regulation difficulty, time had a significant impact on reducing emotional regulation difficulties in girls with traumatic events in the experimental group. Table 4 shows the findings of a paired t-test to clarify the nature of the differences.

significant impact on reducing the emotional regulation difficulties among participants of the experimental group. Nevertheless, despite the reduction in scores from pre-test to post-test and follow-up (after treatment) in the control group, group dialectical behavior therapy had no significant impact in this regard in control group participants.

Table 5: paired T-test results of emotional regulation difficulty for the PTSD participants in the experiment and control groups

variable	situation	experimental				control			
		means difference	t-value	degree of freedom	significance level	means difference	t value	degree of freedom	significance level
emotional regulation difficulty	pre-test/post-test	7.23	1.63	11	0.031*	8.06	1.35	11	0.10
	pre-test/follow-up	7.75	1.32	11	0.018*	10.32	2.17	11	0.056
	post-test/follow-up	-0.35	-1.45	11	0.23	2.061	0.39	11	0.77

**Discussion**

The present study investigates the impact of group dialectical behavior therapy on emotional regulation in girls with traumatic experiences. Research results expressed that the group dialectical behavior therapy had an effect on emotional regulation of girls with traumatic experiences. These findings are in line with the results of the research conducted by Ehring (28), Tull and his colleagues (29),

Ford and Russo (30), Antonia and colleagues (31).

Ehring and Ehlers (32) studied on the rumination role between emotion regulation ability and post-traumatic stress disorder. They pointed out that emotion regulation ability was significantly related to trauma-related rumination as well as levels of PTSD symptoms. Ehring (33) investigated the relationship between emotional regulation difficulties and post-traumatic stress

symptoms. Moreover, the association between low emotion regulation ability and PTSD was mediated by rumination. The results showed that there is a significant relationship between individuals exhibiting post-traumatic symptoms and greater difficulties with emotion regulation.

Harned and her colleagues suggested the dialectical behavior therapy can be one of effective interventions for patients with post-traumatic stress disorder and high-risk patient population (34). Steil (35) and her colleagues also stated that the dialectical behavior therapy for PTSD is useful for reducing the severity and duration of PTSD. Geddes and his colleagues evaluated DBT for the treatment of emotion dysregulation and trauma symptoms in self-injurious and suicidal adolescent females. They expressed that DBT has the potential to improve the symptoms of this high-risk population (36). Fleischhaker (37) findings confirm the effectiveness of 16-24 weeks group dialectical behavior therapy on emotion regulation of 12 teenagers with self-harming and suicidal behaviors with borderline personality disorder symptoms.

Neacsiu (38) examined the effectiveness of 16-week DBT on emotional malfunction of 44 adults with anxiety and mood disorders, who did not manifest any borderline personality disorder symptoms. They found that DBT decreases anxiety and emotional malfunction but significant impact on depression was not observed. This finding is in line with findings of Goldstein who investigated the effectiveness of DBT on adolescents with bipolar disorder (38). One-year follow-up results demonstrate the effectiveness of dialectical behavior therapy on emotional regulation and depression (38).

Therefore, therapeutic approaches studying emotion regulation are useful in post traumatic treatment. Dialectical behavior therapy is conceptualized based on emotion regulation in which a set of adaptive skills such as the ability to identify emotions, understanding emotions, controlling impulsive behaviors and the use of adaptive strategies in relation with positions to regulate emotional responses form the major part of the therapy. Thus, as dialectical behavior therapy claims, using

emotion regulation skills with emotion regulation in this therapy could improve problems related to emotional regulation.

Generally, the results of this study and other studies suggest that the group dialectical behavior therapy is involved in reducing emotional regulation difficulties in girls with traumatic experiences which leads to reduced emotional problems in people. As emotional problems are a source of many disorders such as PTSD, it can be useful and effective in reducing the symptoms of anxiety or prevention of the relapse of post-traumatic stress symptoms courses. Moreover, the rumination of the patients was reduced by the impact of group dialectical behavior therapy on their emotions. It also prevented the deterioration of traumatic symptoms and stress in them.

This study faced with some restrictions including the impossibility of a simple random sampling. In addition, the sample group was made of female students in the range of 15 to 18 years old that made it more challenging to generalize the results. It is recommended that in order to omit this limitation, several studies should be conducted on different populations with various ages, genders, and social positions. On the other hand, the aim of the present study is to find an appropriate therapeutic option for post-traumatic symptoms. Furthermore, there could be further researches to compare this therapy with other common therapies used in depression (such as cognitive-behavioral therapy). By increasing the therapy sessions, longer follow-up periods, adding another group to compare the both therapies, future studies can investigate the effectiveness of group dialectical behavior therapy on emotion regulation in people with PTSD in details. Removing the mentioned limitations would provide significant research support for findings of the present study.

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