

# The effectiveness of trauma-focused cognitive-behavioural therapy in the treatment of depression of divorced women in Tehran

Sepinood Noroozi<sup>1</sup>, Hossein Mokhtariaraghi<sup>2</sup>, Meysam H. Barzoki<sup>3</sup>

1. Department of Psychology and Education, University of Kharzami, Tehran, Iran

2. Department of Psychology, Islamic Azad University of Garmsar, Iran

3. Department of social Science and Business Studies, University of Eastern Finland, Finland

---

## RESEARCH

---

Please cite this paper as: Noroozi S, Mokhtariaraghi H, Barzoki M. The effectiveness of trauma-focused cognitive-behavioural therapy in the treatment of depression of divorced women in Tehran. AMJ 2018;11(4):245–252. <https://doi.org/10.21767/AMJ.2018.3399>

---

### Corresponding Author:

Sepinood Noroozi

Department of Psychology and Education  
University of Khazami, Tehran, Iran

P.O.Box: 1936937198

Email: [sepinood\\_noroozi@yahoo.com](mailto:sepinood_noroozi@yahoo.com)

---

## ABSTRACT

---

### Background

Divorce and disintegration of the family centre is a social problem having consequences considered as the main problems of current societies.

### Aims

Therefore, the aim of this study was to determine the effectiveness of trauma-based cognitive-behavioural therapy in the treatment of depressed divorced women.

### Methods

Materials and Methods: The experimental method was a pretest-posttest design control group with a three-month follow up. The statistical population of this study was a total of 103 women who referred to Mehravar Consulting Centre and Psychotherapy Centre in Tehran. After the initial stages of evaluation, 77 divorced women had the highest mean score in Beck Depression Inventory and 30 were selected and randomly divided into two groups of experimental (15

women), and control (15 women). The experimental group received weekly group intervention in 8 sessions of 90 minutes. Data were analysed using repeated measure ANOVA.

### Results

The findings showed a significant difference between the performance of the two experimental and control groups in depression ( $F=22.23$ ,  $p=0.001$ ) in the post-test and after three months of follow-up.

### Conclusion

The results indicated that trauma-based cognitive-behavioural therapy reduced depression symptoms in divorced women. Therefore, it is recommended to use this therapeutic approach to improve reconciliation, interpersonal relationships, and the promotion of quality of life after divorce in divorced women.

### Key Words

Trauma-focused cognitive behavioural therapy, depression, divorce

---

### What this study adds:

#### 1. What is known about this subject?

It is indicated that the Trauma-Focused cognitive Behavioural Therapy effectively resolves the trauma based and stress resource related outcomes. And successfully reduce the anxiety and depression symptoms.

#### 2. What new information is offered in this study?

The TB-CBT techniques successfully improves the emotional and cognitive disturbance in depressed women. The findings show developments in social behaviour and post-traumatic growth.

#### 3. What are the implications for research, policy, or practice?

Further appraise of longitudinal studies are required in

order to examine the permanency of the considerations.

## Background

Divorce is a process beginning with emotional crisis of both couples and ending with the attempt to resolve the conflict by entering the new position and taking new roles and lifestyles.<sup>1</sup> Hence, the divorce affects the compatibility of couples and their children in all aspects (psychological, physical, social and emotional) and decreases the performance and inefficiency of family members after divorce.<sup>2</sup> As one of the most stressful resources, divorce can disrupt the cognitive structures of individuals making them unable to use stress management methods.<sup>3</sup> This phenomenon has economic, social and, especially psychological harmful effects on women.<sup>4</sup> According to the statistics in different countries, including Iran, the rate of divorce is increasing day by day; as stated by the National Registration Organization in the first six months of 2016, 79806 divorce cases occurred that are 436 cases per day and 18 cases each hour on average.<sup>5</sup> Apparently divorce for women has its effects as well as social frustration, feelings of despair and loneliness, depression and isolation. As a matter of fact, divorce increases the vulnerability of individuals, especially against physical and mental illnesses (including depression).<sup>6</sup>

Divorced women have a limited and painful life due to social and economic pressures showing disgrace, lack of happiness and depression. Consequently, research findings have shown that divorced women are more likely than married women to be depressed.<sup>7-10</sup> In fact, depression is a disorder in the psychosocial system embracing emotions, thoughts, behaviour, and physical functioning.<sup>11</sup> Therefore, depression can interfere with job performance, social and interpersonal relationships,<sup>12</sup> in addition it prevents individuals to cope with the divorce.<sup>13</sup> Several therapeutic interventions have been used to reduce the symptoms of depression, including trauma-based cognitive-behavioural therapy. Trauma-based cognitive-behavioural intervention has been initiated and used by Cohen et al.<sup>14</sup> Trauma-based cognitive-behavioural therapy techniques help the survivors of disasters experience less fear and anxiety; these interventions include stress-management and cognitive-processing immunization. Stress immunization therapy relates to a series of interventions protecting the individual from the negative effects of stress and the use of adaptive skills.<sup>15</sup>

Cognitive processing also refers to a group of interventions encouraging one to discover thoughts about trauma and challenge them and refine cognitions that are inaccurate or unprofitable.<sup>16,17</sup> Trauma-based cognitive-behavioural

therapy is effective especially for people who are severely impacted by mental illness. The therapy is used for women with experience of social injuries, traumatic experiences with various ethnic and racial backgrounds, and its main focus is on reducing traumatic emotional and behavioural problems.<sup>15</sup> This treatment focuses on psychological training for women in the field of false beliefs and thought misconceptions, and helps them to regain their sense of overcoming and control over the situation and present a coherent narrative of trauma.<sup>18</sup> Therefore, considering that divorce and its effects is a widespread problem with short and long-term negative consequences on mental, physical, cognitive skills and social and behavioural development health on women, post-divorce intervention can stop more severe harm to the mental health of divorced women preventing the occurrence of more serious problems. Therefore, given that trauma-based cognitive-behavioural therapy is a new treatment in this area that has been used to reduce mental health problems, it has not used to help divorced women in Iran, yet. Therefore, this study aimed at determining the effect of trauma-based cognitive-behavioural therapy in the treatment of depression of divorced women in Tehran.

## Method

### Statistical population and sampling

The present study was an experimental pretest-posttest control group design with three months follow up. The statistical population of this study was divorced women referring to Mehravar counselling and psychotherapy services centre in Tehran.

Obviously to clarify the statistical population extent, the study based on the women at the age range of 25 to 40 years to avoid the age related issues such as menopausal depression symptoms which might bias the reliability of the therapy outcomes and also to address the most probable cooperative group. Minimum degree of education considered was diploma. In this research, Convenience Sampling Method was used. In the first consultation session, after the referral of divorced women to the counselling centre, a structured clinical interview was conducted and Beck Depression Inventory was completed. During the period from March to June 2016, among 103 divorced women referring to the counselling centre, 77 eligible applicants, who have been divorced for less than a year, were identified after the initial stages of evaluation. Among which, the women with the highest mean scores in the questionnaire who were not under the care of psychotherapy or medication and willing to participate, having the criteria for entering the research were 30 people.

They were randomly assigned to two experimental (15 women) and control groups (15 women).

### Method

After obtaining a license, coordinating with the director of the centre, informing the participants of the experimental group, observing the ethical principles and considering the time limit, the 8 group sessions were held for 90 minutes on Sundays, every week at the Mehravar consulting centre located in Jamalzadeh Street, Tehran. The control group did not receive any type of treatment during this period. Therefore, due to ethical issues, the control group was promised to undergo treatment after the end of the sessions of the experimental group; then, both groups completed the questionnaire in the pre-test, post-test and after three months of follow up. Data were analysed using repeated measure analysis of variance.

Summaries of trauma-based cognitive behavioural therapy intervention sessions are as follows:

The first session: 1) Introducing techniques for identifying feelings, such as intense emotions of anger, fear, hatred and revenge that sometimes lead to a negative reaction in people. 2) Practical training of feelings identification techniques in the group and 3) homework of the trained topics. Second session: 1) Review of the previous session and feedback on the exercises mentioned. 2) Introduction of deep muscle relaxation and deep breathing techniques in yoga. These techniques reduces some of the symptoms associated with stress. 3) Practical practice of deep muscle relaxation and deep breathing techniques in the group; and 4) homework of the trained topics. Session 3: 1) A review of the previous session and feedback of the exercises; 2) Practical practice of thought stopping techniques; and 3) The homework of the trained content. Session 4: 1) Reviewing the previous session and feedback on the topics and exercises mentioned. 2) Practical training of cognitive adaptive skills such as focusing on positive aspects, positive self-esteem, optimism training, and 3) homework of the trained topics. Fifth Session: 1) Review of the previous session and feedback on the lessons and exercises provided. 2) Gradual exposure and practical implementation of it in the form of drawing or speaking or writing. 3) The homework of the topics taught. Session 6: 1) Review of the previous session and feedback on the topics and exercises mentioned. 2) Implementation of interventions for cognitive processing such as thought discovery and challenge, and cognitive modification of misconceptions. 3) Homework.

Session 7: 1) A review of the previous session and feedback. 2) Trauma awareness and response, focusing on positive aspects, managing emotional responses to trauma,

identifying types of emotions in the face. 3) Homework. Session 8: 1) Review of the previous session and feedback; 2) discussion of trauma reminders; and increasing environmental support; and 3) summing up all the sessions and reviewing feedback on the whole topics, practical ways to build continuing skills and achieving behavioural stability.

### Instrument

Beck Depression Inventory: Beck Depression Inventory (BDI) is a self-rated scale consisting of 21 items and each item evaluates key symptoms of depression that is: sadness, pessimism, sense of failure, dissatisfaction, guilt, punishment, self-dislike, self-blame, suicidal thoughts, crying, restlessness, social withdrawal, Indecisiveness, loss of energy, changes in sleep pattern, irritability, change in appetite, preoccupation, fatigue, and loss of sexual interest. Beck, Steer and Garbing<sup>19</sup> reported the internal stability of this questionnaire from 0.73 to 0.93 with a mean of 0.86 and the alpha coefficient of the patient group was 0.86 and 0.81 for the non-patient group. Fata<sup>20</sup> reported the reliability of this questionnaire in Iranian adult society to be 0.78 and its validity was 0.84 and its internal reliability was 0.83. Also, the validity of the questionnaire was reported from 0.73 to 0.92 using the internal consistency and retest methods.

### Results

The divorced women (experimental group and control group) had a mean age of 34.30 years and a standard deviation of 2.02. 5% of these women had diploma (1 person), 30% higher-diploma degree (6), 45% bachelor's degree (9) and 20% had master's degree (6). Also, 40% were housewives (8 people), 15% had free jobs (3 people) and 45% were employees (8 people).

Table 1 indicated that the depression scores of the experimental group were lower than the control group in the post-test and the follow-up phase.

In Table 2, the Kolmogorov-Smirnov test results indicates normal distribution of scores, the data of the Levine test also indicates homogeneity of variances in the scores of depression. The result of the W test display rejection of sphericity. Considering the significance level of chi-square for this test was less than 0.05, therefore this default is rejected. In this condition, Epsilon correction should be used. Therefore, Greenhouse-Geisser correction proposed three corrective options are more conservative than the other two. Therefore, this statistic has been used to interpret the results of within-subject effects tests.

Based on the Table 3, the significance level of repeated measures of variance analysis illustrate the differences between the mean score of depression in the three stages of measurement were significant ( $P < 0.001$ ). In addition, the interaction between the repetition of the test and the experimental variable (Trauma-Focused Cognitive-Behavioural Therapy) and the difference in the mean of depression score in the experimental and control group was significant at three stages ( $P < 0.001$ ). Therefore, it is clear that there was a significant difference between the mean score of depression in post-test and follow-up.

Table 4 displays the results of Bonferroni correction test considering a significant difference between the mean scores of depression between the pre-test, post-test and follow-up ( $P = 0.01$ ), but the difference between post-test and follow-up was not significant indicating that the results were not returned at the follow-up stage and the effect of intervention has been fixed.

## Discussion

The purpose of this study was to consider the effect of Trauma-Focused Cognitive-Behavioural therapy on depression in divorced women in Tehran. The results showed that group training of trauma-Focused cognitive-behavioural therapy has been effective in reducing the depression symptoms of the experimental group in post-test and follow-up stages. The findings of this study were in line with the studies of Fakhary et al.,<sup>17</sup> bottche et al.,<sup>21</sup> Wamser-Nanney et al.,<sup>18</sup> Del Palacio-Gonzalez et al.,<sup>22</sup> Rodriguez-Rey et al.,<sup>23</sup> Cohen et al.<sup>15</sup> muris et al.,<sup>24</sup> which showed that interventional program made traumatic patients feel more positive and optimistic about themselves and their families. Regarding the findings, the descriptive-functional theoretical model of post-traumatic development can be referred;<sup>23</sup> based on this model, when a person can control his negative thoughts after traumatic events, post-traumatic development can be nurtured in him/her. On the other hand, De Palazzo-Gonzales et al believed that cognitive processing is effective in post-traumatic development.<sup>22</sup> Therefore, in trauma-focused cognitive-behavioural therapy, several sessions focused on correcting the negative thoughts of divorced women, and various techniques such as thought stopping, identifying the connections between thoughts and feelings and daily thoughts recording were used and the researchers attempted to reduce their thought rumination. Rodriguez-Rey et al also suggest that coping strategies such as thought stopping method used for dealing with cognitive distortions and worry thoughts prepare them for better cognitive processing;<sup>23</sup> therefore, this approach was emphasized in

educational sessions; The method disrupts the attention of divorced women towards critical thoughts, and at the same time, focuses their attention on noncritical thoughts.<sup>16</sup>

In addition, cognitive-behavioural interventions have helped one to use the methods such as negative thought stopping, stress immunization techniques and positive self-talking, to increase the ability to deal with destructive and negative thoughts at the follow-up stage as participants in the experimental group have decreased their depression by reducing their negative thoughts or increasing positive self-talking.<sup>17</sup> However, afterwards, these changes can be explained based on Frederickson's developing and constructive theory where by reducing the behavioural problems in women through self-control and control pressuring factors, it is believed that this will lead to higher female empowerment and may reduce their vulnerability to extreme irritation, aggression or depression in dealing with post-divorce pressures, and this cycle can further expand the social support network which in turn lead to more positive emotions and reduce more behavioural problems. The significance of the results in the post-test and follow-up stages showed that this intervention required more time for the emergence and transformation into individual behaviour, and reducing the behavioural and functional problems of this group and increasing the ability to control the group in general, provided more favourable conditions for this group. Different trauma-based cognitive-behavioural approaches including identification of emotions, cognitive adaptation, and thought stopping and promoting a sense of safety reduce the stress of separation in women and encourage them to use of adaptive skills, which, in turn, can reduce behavioural problems. It should be noted that the therapist should be familiar with cultural and religious issues so as to facilitate the use of trauma-based cognitive-behavioural interventions for divorced women.

Deep muscle relaxation is one of the other techniques for stress immunization in trauma-based cognitive-behavioural therapy. In fact, when muscles are stressed, we feel tired and sad, but when the muscles relax, we feel more comfort.<sup>17</sup>

Attention to relaxation reduces the focus on traumatic thoughts, and since stress and relaxation are opposite to each other, they learn to practice this when they are having unwanted thoughts; these different ways of relaxation can be used in coping with psychological reactions, especially those that are caused by uncontrollable psychological pressures. Evidence suggests that relaxation practices are

effective in managing anxiety, pain, and other psychological stress responses.<sup>26</sup> Thought Stopping is another technique that is effective in immunization against stress during cognitive distortions and worrying thoughts; this technique also prepares patients for cognitive processing, as it teaches them that they can focus on self-conscious thoughts. This method disrupts the attention of these women towards critical thinking, while at the same time, focuses their attention on non-critical thoughts. This technique makes it possible to use it in cases where the person needs to focus on his or her own problems.<sup>14</sup>

On the other hand, with the help of trauma-based cognitive-behavioural therapy, it has been attempted to make depressed women aware of the thoughts and negative emotions that lead to confusion and avoidance when they establish relationships with others. Zhou, Wu and Zhen showed that the way to control and adjust emotions has a direct correlation with post-traumatic growth.<sup>27</sup>

Regarding the fact that Shigemoto et al showed that the decrease in rumination was associated with post-traumatic growth,<sup>28</sup> and in the Leal-Soto, Carmona-Halty and Escape-Erbine study, it was found that lack of rumination after traumatic experience is important for post-traumatic growth, during treatment sessions, women in the experimental group were trained to eliminate maladaptive self-talks in stressful situations and use optimistic interpretations, especially when faced with critical situations.<sup>29</sup> In addition, during the treatment, they were encouraged to question their upsetting thoughts and memories and use alternative self-talks in order to counter these affects and remorse that cause physical and mental disturbances.

Last but not least, acknowledging the fact that the Trauma Based Cognitive Behavioural Therapy succeeded in decreasing the depression symptoms, emphasising on "divorce" in this study is to consider it as a "traumatic factor" for women in order to evaluate the efficiency of the techniques in controlling the negative trauma related issues in depression.

## Conclusion

This treatment affects the improvement of social behaviour, women's sense of self and others, a subset of post-traumatic growth. In general, all of these cases provide grounds for post-traumatic growth in divorced women. Although the present study showed that trauma-based cognitive-behavioural therapy can effect on women post-traumatic growth, it is necessary to repeat the research to

clarify the effectiveness and mechanism of this method. Practically it should be noted that due to the limitations such as availability of the sample selection, limited samples referenced to the consultant clinic (the Mehrvar consulting centre), sample size, self-report measurement, generalizability and inference should be taken with consideration. Likewise due to the access limitations and practical restrictions such as location of the psychotherapy practice and expenses, the three months' time available to follow up the change or stability of the results was constrained. Therefore a further study to consider six months follow up or longer is strongly recommended.

Based on this, it is suggested that appropriate longitudinal studies be carried out to examine the long-term effects and the degree of compatibility after divorce will be considered over the next few years. It is also suggested that family counsellors use these therapeutic programs and their outcomes in counselling centres, given the impact of third wave therapy, particularly trauma-based cognitive-behavioural therapy, on improving the self-esteem and depression. Also, in order to increase the generalizability of the results, similar studies should be performed in other samples with different demographic characteristics.

---

## References

1. Gottman JM, Gottman JS. 10 Principles for doing effective couples therapy (Norton Series on Interpersonal Neurobiology). New York: Norton. 2015.
2. Overbeek MM, De Schipper JC, Willems AM, et al. Mediators and treatment factors in intervention for children exposed to interparental violence. *J Clin Child Adolesc Psychol.* 2015;1–17.
3. Hosseini Yazdi SA, Mashhadi A, Kimayee SA, et al. The effectiveness of special interventional program for divorce children on improvement of self-concept and resilience of children. *Quarterly J Appl Psychol.* 2016;9(1, 33):7–21.
4. Nabizadeh F. Comparison of the effect of drug therapy and cognitive therapy on reducing the symptoms of depression in divorced women. *Scientific Journal of the Medical Council of the Islamic Republic of Iran.* 2016;(3):204–201.
5. Saadati N, Rostami M, Darbani SA. Comparing the effectiveness of Acceptance and Commitment Therapy (ACT) and Compassion Focused Therapy (CFT) on improving self-esteem and post-divorce adaptation in women. *Family Psychology.* 2017;3(2):45–58.
6. Legrand JC. The Relationship between selected biographical characteristic and anxiety and depression of

- participant in a divorce work shop, Texas University 2011.
7. Lorenz FO, Simons RL, Conger RD, et al. Married and recently divorced mothers' stressful events and distress: Tracing change across time. *J Marriage Fam.* 1997;59:019–030.
  8. Anderson DK, Saunders DG, Yoshihama M, et al. Long-term trends in depression among women separated from abusive partners. *Violence against Women.* 2003;9:827–838.
  9. Scott M, Stanley ES, Allen HJ, et al. Decreasing divorce in U.S. army couples: Results from a randomized controlled trial using PREP for strong bonds. *J Couple Relatsh Ther.* 2010;9(2):149–160.
  10. Abdul Kadir N, Bifulco A. Vulnerability, life events and depression amongst Moslem Malaysian women: comparing those married and those divorced or separated. *Soc Psychiatry Psychiatr Epidemiol.* 2011;46:853–860.
  11. Azizi A, Ghasemi S. Comparison of the effectiveness of three solution-centred, cognitive-behavioral approaches, and treatment-based acceptance and commitment on depression and aggravation of divorced women. Ph.D. *Counseling and Psychotherapy.* 2017;8(29):236–207
  12. Sadock BJ, Sadock VA, Ruiz P. Kaplan & Sadock's *Comprehensive Textbook of Psychiatry*, 9th Edition. Copyright, Lippincott Williams & Wilkins, 2009.
  13. Bilali T, Etemadi A, Fatehizadeh M. Investigating the relationship between cognitive and demographic factors predicting post-divorce adjustment in divorced women in Isfahan. *Quarterly Journal of Counselling and Psychotherapy.* 2011;2(5):55–63.
  14. Cohen JA, Greenberg T, Padlo S, et al. *Cognitive behavioural therapy for traumatic bereavement in children treatment manual.* Centre for Traumatic Stress in Children and Adolescents. Department of Psychiatry Allegheny General Hospital Pittsburgh, PA. 2001.
  15. Cohen JA, Berliner L, Mannarino A. Trauma focused CBT for children with co-occurring trauma and behaviour problems. *Child Abuse Negl.* 2010;34(4):215–24. doi: 10.1016/j.chiabu.2009.12.003 PMID: 20304489
  16. Levrier K, Marchand A, Belleville G, et al. Nightmare frequency, nightmare distress and the efficiency of trauma-focused cognitive behavioural therapy for post-traumatic stress disorder. *Arch Trauma Res.* 2016;5(3):e33051. doi: 10.5812/atr.33051 PMID: 27800462
  17. Fakhary A. Effectiveness of Trauma-Based Cognitive-Behavioural Therapy (TF-CBT) therapy with or without treatment game sand, on the degree of anxiety, depression and signs of post-traumatic stress in anxious children. Master's thesis of clinical psychology, Department of Clinical Psychology, University of Social Welfare and Rehabilitation Sciences. 2016.
  18. Wamser-Nanney R, Steinzor CE. Factors related to attrition from trauma-focused cognitive behavioral therapy. *Child Abuse Negl.* 2017;66:73–83. doi: 10.1016/j.chiabu.2016.11.031 PMID: 28024712
  19. Beck AT, Steer RA, Garbin MG. Psychometric properties of the Beck Depression Inventory: Twenty-five years of evaluation. *Clin Psychol Rev.* 1988;8:77–122.
  20. Fata L. Emotional states and cognitive processing of emotional information: comparing two conceptual frameworks of the thesis of Ph.D. in Clinical Psychology, Tehran Psychiatric Institute. 2013.
  21. Bottche M, Kuwert P, Pietrzak RH, et al. Predictors of outcome of an Internet-based cognitive-behavioural therapy for post-traumatic stress disorder in older adults. *Psychol Psychother.* 2016;89(1):82–96. doi: 10.1111/papt.12069 PMID: 26234801
  22. Del Palacio-Gonzalez A, Clark DA, O'Sullivan LF. Cognitive processing in the aftermath of relationship dissolution: Associations with concurrent and prospective distress and posttraumatic growth. *Stress Health.* 2016. doi: 10.1002/smi.2738 PMID: 27982507
  23. Rodriguez-Rey R, Palacios A, Alonso-Tapia J, et al. Posttraumatic growth in paediatric intensive care personnel: Dependence on resilience and coping strategies. *Psychol Trauma.* 2016. doi: 10.1037/tra0000211 PMID: 27929306
  24. Muris P, Vermeer E, Horselenberg R. Cognitive development and the interpretation of anxiety-related physical symptoms in 4. 13-year-old non-clinical children. *J Behav Ther Exp Psychiatry.* 2008;39:73–86.
  25. Fredrickson BL, Tugade MM. What Good Are Positive Emotions in Crises? Personality processes and individual differences. 2002;84(2):365–376.
  26. Carr A. *Positive Psychology. The science of Happiness and human Strengths.* Brunner – routledge. Taylor & Francis group. Hove and New York. 2004.
  27. Zhou X, Wu X, Zhen R. Understanding the relationship between social support and posttraumatic stress disorder/posttraumatic growth among adolescents after Ya'an earthquake: The role of emotion regulation. *Psychol Trauma.* 2017;9(2):214–21. doi: 10.1037/tra0000213 PMID: 27736141
  28. Shigemoto Y, Low B, Borowa D, et al. Function of Personal Growth Initiative on Posttraumatic Growth, Posttraumatic Stress, and Depression Over and Above Adaptive and Maladaptive Rumination. *J Clin Psychol.* 2016. doi: 10.1002/jclp.22423 PMID: 27922720

29. Leal-Soto F, Carmona-Halty M, Ferrer-Urbina R. Rumination in posttraumatic stress and growth after a natural disaster: a model from northern Chile 2014 earthquakes. *Eur J Psychotraumatol*. 2016;7:31638. doi: 10.3402/ejpt.v7.31638 PMID: 27900935

**PEER REVIEW**

Not commissioned. Externally peer reviewed.

**CONFLICTS OF INTEREST**

The authors declare that they have no competing interests.

**FUNDING**

None

**ETHICS COMMITTEE APPROVAL**

The research project was registered by TCTR Committee.  
Study reference number: TCTR20180320004

**Table 1: Descriptive statistics of depression scores in the experimental and control groups in three stages: pre-test, post-test and follow-up**

Statistical index	Exp			Con	
	Stages	M	SD	M	SD
Variable	pretest	30/80	2/85	28/40	2/59
Depression	posttest	17/60	3/62	28/00	Apr-02
	Follow-up	16/80	4/31	27/80	Mar-04

**Table 2: Results of normal distribution of scores and homogeneity test of variables**

Variable	Kolmogorov Smirnov test		Levine test				$\chi^2$	W	F	epsilon correction		
	Statistics	Sig	DF 2	DF1	F	Sig				Greenhouse-Geisser	Huynh-Feldt	Lower bound
Depression	0/50	0/96	18	1	0/03	0/85	11/76	0/50	0/03	0/66	0/74	

**Table 3: The results of repeated measures ANOVA for the effect of trauma-based cognitive-behavioural therapy on depression of divorced women in pre-test, post-test and follow-up with Greenhouse-Geisser (n=30)**

Variable	Source		Sum of squares	Df	Mean of squares	F	Sig	Effect size	Test power
Depression	intra-group	Group*group evaluation	665/20	1/33	498/73	69/13	0/001	0/92	1/00
			572/93	1/33	429/55	59/43	0/001	0/91	1/00
	Inter-group		601/66	1	601/66	22/73	0/001	0/55	0/99

**Table 4: Results of follow up test in three stages: pre-test, post-test and follow-up**

Statistics	Pretest-posttest		Pretest-posttest		Pretest-posttest	
	Mean difference	SD	Mean difference	SD	Mean difference	SD
Depression	2/13*	0/18	2/57*	0/21	0/43	0/14