

The effectiveness of cognitive - behavioral therapy in reducing the post-traumatic stress symptoms in male student survivors of the earthquake in the central district of Varzeghan

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Abstract

Background: The aim of this study is investigating the effectiveness of cognitive - behavioral therapy in reducing the post-traumatic stress symptoms in male student survivors of the earthquake in the central district of Varzeghan.

Methodology: This study is a quasi-experimental study with pretest – Posttest design with control group. The population included all Central district of Varzaghan city high school II students in 2015-2016 who were evaluated based on secondary trauma stress scale (STSS) of Bride. Individuals with the highest scores were selected as the study subjects and divided into two experimental and control groups (n 1 = n 2=25) randomly. The experimental group received 6 therapy sessions. The derived data from the groups were analyzed.

Findings: The results of covariance analysis showed that there is a significant difference between the experimental and control groups in intrusive thoughts scores and there was a significant difference in avoidance (P <0.05), but in arousal scale there was no significant difference (0.05>P).

Conclusion: In general, it can be concluded that this therapeutic intervention is effective and it can be used at health centers as well as schools in order to reduce the symptoms of post-traumatic stress.

Key words: Posttraumatic stress disorder, Cognitive - behavioral therapy, Students.

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Introduction

In recent decades, the psychological effects of earthquakes have been taken into consideration more than before. Studies which have been addressed to survey the natural disasters outcomes show that many earthquake survivors after confronting the stressful event (such as lack of interested people, social structure chaos and social supports loss), show certain clinical responses (Livanuo, Bassoglu, Salcioglu, & Kalendar, 2003). Studies have shown that severe earthquakes can cause severe long-term disabilities. In studies which were conducted on 430 people who were Turkey's 1999 earthquake survivors, disability and mental disorders outbreaks such as post-traumatic stress disorder had a direct correlation with proximity and exposure to the earthquake (Kilic & Ulusoy, 2001). In another study which was conducted on 586 survivors of the earthquake in Turkey results in that severe and terrible earthquake lead to long-term psychological consequences, especially in people who had high exposure levels (Salcioglu, Basoglu & Livanou, 2003).

Typically, post-traumatic stress disorder is the first response of survivors to trauma, which is an important prediction of their subsequent mental and physical health status long-term outcome (March, Amaya-Jackson, Murray & Schulte, 1998). A study in Taiwan showed that 7.21 percent of the 323 earthquake survivors had PTSD symptoms, but in general, there are numerous reports that vary from 5.2 to 33 percent in adults and 28 to 70 percent in children (Hsu, Chong, Yang & Yen, 2002). Therefore, in order to reduce the disabilities, preventive and therapeutic interventions, such as supporting group psychotherapy and treatments based on cognitive-behavioral methods as well as other types of psychotherapy, have been paid attention (Livanuo, Bassoglu, Salcioglu & Kalendar, 2003). Many clinical studies have shown that cognitive behavioral programs are effective in controlling the symptoms of PTSD (Foa, 2006). In research performed by March et al (1998) showed that cognitive behavioral therapy intervention is effective in PTSD stress disorder.

Cognitive behavioral therapy is a way that helps people think differently about bad memories so that they will be less distressing and more manageable. Usually this type of treatment also involves several sessions of relaxation. Wessely, Rose and Bisson (2002) also conducted a study on 35 earthquake victims which suggested the high effectiveness of cognitive-behavioral treatments for PTSD and grief. In other research Ehlers (2000) studied 28 people with PTSD and reported that PTSD symptoms and anxiety in patients who had undergone cognitive-behavioral therapy was reduced compared to the control group. In another study the group psychotherapy effect using psychological recounting for 30 natural events survivors was investigated 6 months after the event, which indicated symptom reduction in both intervention and control groups (Chemtob, Tomas and Law, 1997).

Foa (2004) treated 117 PTSD affected victims of traumatic events through flooding and a combination of spate and

cognitive restructuring treatment. He concluded that both treatments reduced the symptoms of PTSD and depression identically.

Regarding the effectiveness of cognitive behavioral therapy in reducing symptoms of post-traumatic stress in relation to disasters caused by war, floods, storms, earthquakes and so on, this paper seeks to determine whether cognitive behavioral therapy is effective to alleviate the symptoms of post-traumatic stress in earthquake survivor male students in the central district of Varzaghan.

Methodology

A quasi-experimental technique of pretest-posttest type with control group was used, through which a cluster of high school male students were selected randomly and the secondary trauma stress scale by Bride (STSS) was conducted on students. Among the students who gained high scores in each subscale in the Secondary Trauma Stress Bride questionnaire 50 students were selected randomly and 25 students were replaced in the experimental group and 25 in the control group.

Data Collection Tool

Secondary Trauma Stress Scale Bride (STSS) of Bride

This scale was established by Bride and his colleagues in 2003 and has 17 items summarized in three subscales;

1. Nuisance
2. Avoid
3. Arousal

At this scale, using a five degrees Likert scale from 1 (never) to 5 (always) the participants were asked to identify to what extent each of the items happened to them in the previous week. High scores on each subscale indicate lack of health and less score, simply a healthy student. Bride et.al studies results showed that the scale reliability is .93 which has an acceptable convergent and divergent and structure validity. In this study, the Cronbach's alpha coefficient for the disturbance, avoidance and arousal subscale were estimated as 0.878, 0.798 and 0.847, respectively.

Treatment Plan

The content of therapy sessions
First Session - communicate with patient, evaluation and education of patient
Second Session - relaxation training and familiarity with the therapeutic model
Third Session - Conceptual facing with the traumatic event education
Fourth Session - identify dysfunctional thoughts and to identify and challenge them
Fifth Session - Exposing and cognitive restructuring
Sixth Session - Conclusion, tutorials and assignments review, improvements identifying and encourage and reinforce the patient
Seventh Session - Questionnaire return

Findings

For data analysis, in addition to using descriptive statistics, multivariate analysis of covariance (MANCOVA) also used.

Descriptive Findings

Table 1. The mean and Standard deviation of pre-test, post-test scores of research variables in both experimental and control groups

variables	group	n	pre-test		post-test	
			mean	Standard deviation	mean	Standard deviation
Intrusive thoughts	experimental	25	11.88	3.51	10.00	2.81
	control	25	11.60	3.62	11.52	3.48
Avoid	experimental	25	17.68	4.74	14.32	2.62
	control	25	15.64	4.31	15.64	3.71
Arousal	experimental	25	12.96	4.15	13.00	3.27
	control	25	11.48	4.61	11.36	3.63

Table 1 results imply the improvement of variables in the experimental group in posttest stage compared to the control group, but no difference was observed in the control group.

In the present study, the covariance analysis was used for inferential results analysis. Therefore, prior to study the hypotheses, the normality of scores distribution assumption was examined.

To test the assumption the Shapiro-Wilk test was used. The test results for research variables pre-test scores are given in Table 2.

Table 2: Shapiro-Wilk test results for pre-assumption scores distribution normality

variables	group	n	Shapiro-Wilk test		
			Statistics	df	sig
Intrusive thoughts	experimental	25	0.972	25	0.835
	control	25	0.922	25	0./141
Avoid	experimental	25	0.922	25	0/.128
	control	25	0.961	25	0.625
Arousal	experimental	25	0.964	25	0.676
	control	25	0.934	25	0.325

As can be seen in Table 2, assuming zero for the scores distribution normality of two groups in research variables is confirmed, is that the scores distribution normality pre-assumption in pre-test and in both control and test tests groups were confirmed.

Inferential evaluation of data

Given that in each variable the post-test scores were the dependent variables and in order to control the effect of pre-test (as covariate and control variable) the ANCOVA was used on grades.

Cognitive-behavioral therapy is effective in reducing the symptoms of post-traumatic stress (intrusive thoughts, avoidance and arousal) of Varzaghan earthquake-stricken students.

Table 3: The results of cognitive-behavioral therapy covariance analysis on intrusive thoughts - pre-test - group membership

variables	source of change	SS	df	MS	F	sig	eta
Intrusive thoughts	pre-test	218.51	1	51218	57.07	0.001	0.55
	Group memberships	28.35	1	28.35	7.40	0.009	0.14
Avoid	pre-test	214.55	1	214.55	60.69	0.001	0.57
	Group memberships	76.46	1	76.46	21.63	0.001	0.32
Arousal	pre-test	183.40	1	183.40	84.48	0.001	0.51
	Group memberships	429	1	9.42	2.40	0.128	0.05

As the Table 3 results show, after removing the effect of pre-test scores, except the arousal scale, given that a significant level obtained for both variables of intrusive thoughts and avoidance are less than Alpha 0.05, so the research hypothesis was confirmed. Thus, we can conclude with confidence of 95/0 that cognitive-behavioral therapy was effective in participant's intrusive thoughts and avoidance reduction but it had no significant effect on the participant's arousal reduction. Squared Eta was estimated as 0.14, 0.32 and 0.05 for intrusive thoughts, avoidance and arousal, respectively. Namely 0.14, 0.32 and 0.5 of intrusive thoughts, avoidance and arousal variances was explained by the cognitive-behavioral therapy independent variable.

Conclusion

Disasters have been an integral part of human life. Natural disasters cause death and disability to millions of people around the world every year and resulting financial damages. As various studies have shown, the confrontation with a damaging event can lead to various disorders, and PTSD stress and anxiety can be cited as the most important. To treat the post-PTSD stress disorder

symptoms and associated disorders according to different perspectives of the etiology of this disorder, various therapies has been suggested which include cognitive behavioral therapy method. Thus, given that several researchers have confirmed the effectiveness of cognitive-behavioral treatment for post-traumatic stress disorder, the aim of this study was investigating the cognitive behavioral therapy effectiveness in symptoms of post-traumatic stress disorder reduction ,among the earthquake survivor male students of the central district of Varzaghan. The results showed that the cognitive-behavioral group therapy diminished the stress of earthquake survivor male students of the central district of Varzaghan PTSD shown in the posttest scores in the experimental group more than the control group.

The results obtained in this study are in good accordance with those of Foa (2004), Salcioglu, Basoglu & Livanou (2003), Wessely, Rose and Bisson (2002), March (1998), Ehlers (2000), Chemtob and et al (1997) .

In explaining how the cognitive behavioral therapy effects on PTSD symptoms of the earthquake survivor male students of the central district of Varzaghan it can be

due to the effective factors on PTSD symptoms continuation in and given the cognitive-behavioral therapy techniques

by using relaxation, conceptual facing with the traumatic event education, identifying dysfunctional thoughts and challenging them and exposing and cognitive restructuring could reduce the effects of PTSD in the control group.

Given that the present study was performed on the earthquake survivor male students of the central district of Varzaghan and sampling was available and purposeful, we cannot generalize its results to other students' disorders of other age groups and this generalization should be done with caution.

Another limitation of the study was the lack of six-months' follow-up. It is recommended to conduct studies to assess the students' family situation and their well-being regarding the extent of this problem in Iran as well as conducting research about adjustment to the adverse effects of close relatives loss in various ages.

Regarding the effectiveness of cognitive - behavioral therapy in reducing the bereaved students PTSD symptoms it is suggested to use these services in other organizations and schools. Establishing organizations and centers in order to support and train to prevent post-traumatic stress symptoms and use of experts, in agencies, governmental and non-governmental organizations for reducing psychological problems in children and adolescents who are affected by injuries, and educating their families and adolescents and providing appropriate support to their school officials are among other proposals.

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