

The Effect of Metacognitive Therapy on Traumatic Stress Disorder Symptoms in Survivors of Accidents in Shahr-e-Kord

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Article information	Abstract
<p>Article history: Received: 6 Dec 2012 Accepted: 25 Feb 2013 Available online: 18 Aug 2013 ZJRMS 2014 Oct; 16(Suppl 1): 35-39</p> <p>Keywords: Metacognitive therapy Post traumatic stress disorder Accident survivors</p> <p>*Corresponding author at: Department of Counseling, Faculty of Counseling, University of Isfahan, Isfahan, Iran. E-mail: aliakbarzafarizadeh@yahoo.com</p>	<p>Background: Post traumatic stress disorder (PTSD) is referred to feed back of exposure in severe stressful situations such as natural disasters, severe accidents and so on. The aim of this study is to evaluate the effect of metacognitive therapy on reduction of PTSD symptoms between accident survivors of Shahr-e-Kord city.</p> <p>Materials and Methods: This research is semi-experimental. A hospital was selected by cluster sampling that for choosing sample, 36 male who were accident survivors, were selected by using interview based on DSM-IV-TR who were experienced PTSD situation. The subjects were randomly assigned into experimental group (N=18), control group (N=18). There were attrition in sample that finally experimental and control groups included 15 subjects. The experimental group received eight 90 min weekly sessions of metacognitive therapy. These tools were used in this research: 1-Clinical interview based on DSM-IV-IR, 2-Mississippi PTSD scale (Used in pretest-posttest and follow up sessions).</p> <p>Results: The results showed that metacognitive therapy, reduced PTSD symptoms in experimental group in post-test and two-month follow up sessions were done ($p<0.01$).</p> <p>Conclusion: Statistically significant differences between pre-test and post-test results in experimental group confirmed the effect of metacognitive therapy on reduction of PTSD symptoms.</p>

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Introduction

Post-traumatic stress disorder (PTSD) is an anxiety disorder which is a feedback to stressful factors. This disorder occurs when individuals experience a high tension emotional situation. Some event which cause PTSD: experiencing or observing the war, abuse, observer of a murder or accident, and so on [1, 2]. Reminding PTSD factors whether in mind or environment causes severe mental and physical tension. This mental disorder can be serious so that individuals with PTSD disorder try to prevent many symptoms which remind them those events [3].

Researchers concluded the symptoms of PTSD: increasing excitation, prevention of issues and situations which remind the trauma, excitability, insomnia, nightmares, and so on [4, 5]. Road accidents become critical general health [6]. American psychological association (APA) put the accidents as a tension factors in DSM-IV [7]. Blanchard and Hickling identified accident as a factor which causes PTSD [8]. Lots of approaches come in to existence such as behavioral approaches, psychoanalysis approaches, cognitive behavioral therapy to determine and treatment of PTSD [9, 10].

New methods come into account for PTSD, such as Wells's metacognitive therapy [11]. Metacognitive movement insists on beliefs and negative thoughts as outcome of metacognitive control on cognition. It tried to change metacognitive thoughts which are effective on

maladaptive style of thoughts or change the cause of increasing general negative thoughts [12]. Wells and Sembi's model is shown as a diagram in figure 1 [13].

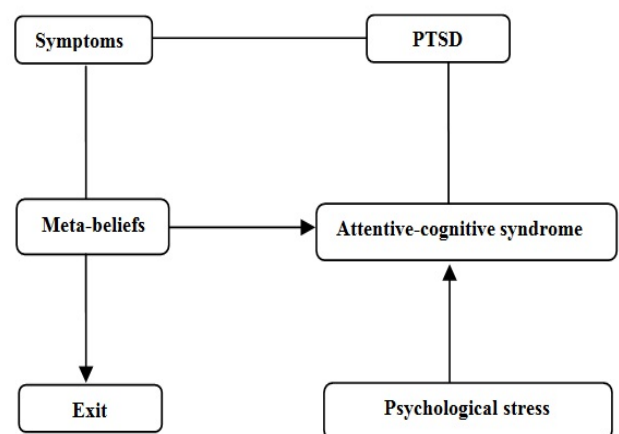


Figure 1. Metacognitive model for PTSD unpleasant event

Effectiveness of metacognitive therapy has been confirmed through various studies on psychological disorders. For example, Bahrami conducted a survey to investigate the effectiveness of emotion-metacognition therapy with drugs compare to standardized methods for reduction of manic-depression symptoms in bipolar

patients. Findings showed that metacognitive therapy causes reduction of PTSD symptoms [14]. Furthermore Bakhtavar investigated the effectiveness of behavioral-metacognitive therapy on reduction of PTSD symptoms between war-injured of Iran-Iraq that this intervention has had significant in reduction of PTSD symptoms [15]. Regarding to what have been mentioned above, the aim of this survey is to investigate the effectiveness of metacognitive on reduction of post traumatic disorder (PTSD) between accident survivors in Shahr-e-Kord city.

Materials and Methods

This study is semi experimental and it was designed pretest, posttest with experimental and control group by random assignment. Statistical population consists of all injured and survivors of car accidents in Shahr-e-Kord city who went to emergency ward of hospitals which one hospital (Kashani) was selected by cluster sampling. Sample was selected by interview based on DCM-IV-TR who experienced PTSD situation. Thirty six of them were selected by convenience sampling from accident survivors and 18 of them designed in each group as preliminary sample. Participants had some attrition because of unwillingness, lack of motivation and special situation of treatment. Number of participants decrease to 30 (N=30). Which were designed in two groups (N=15). Pretest was performed in 2 different sessions with 1 day interval. Then they were allocated randomly to control and experimental group. The experimental group received metacognitive intervention which included eight 90 min weekly group sessions.

Protocols consist of familiarity with logic of treatment and formulation of metacognitive profile, mindfulness control skills, concern delay, observation and investigation the promotion of divers attention training techniques, quit control based on threat which lead to decrease the concern and rumination, and at the end investigating the promotion of patients by using techniques which were trained.

After finishing eight intervention sessions (two month), posttest was conducted in 2 groups and finally follow up sessions were completed.

1. Diagnosis flowchart of PTSD is shown in figure 1. These symptoms act as pushing factors of cognition and for guidance of thoughts and counteraction, choose and change some meta-cognition [16].
2. Clinical interview form based on DSM-IV-IR, constructed interview for psychological disorder diagnosis [17].
3. Mississippi post-traumatic stress disorder scale, Mississippi PTSD scale is one of famous scales which determine intensity of PTSD. This scale consists four subscales and one overall score which measure the intensity of PTSD. Subscales of this questionnaire are: 1. Breached memories subscale, 2. Depression subscale, 3. Lack of emotional control subscale.

Items were scored in five degrees of Likert scale 'non honest'(1), 'slightly honest'(2), 'somewhat honest'(3), 'honest'(4), 'extremely honest'(5). This questionnaire

consists of 39 items so min score is 39 and max score is 195. Mississippi scale performed on 266 participants. The Cronbach's alpha coefficient was reported 0.92% which is stated high inner consistency of this study. Therefore reliability was reported 0.92 in this study. This scale because of having adequate number of questions and being adapted to Iranian culture has been used as one of the required tools [17]. In this survey in order to control an effective pretest and other related variables to pretest, multivariate covariance (MANCOVA) were used.

Results

By using descriptive statistic compute mean and standard deviation which was used for variables to show the mean deviation between two groups (experimental and control) in pretest, posttest and follow up assessment. It can be seen from table 1 that mean scores of PTSD symptoms, depression, breached memories, lack of emotion control, interpersonal difficulties in pretest, posttest and follow up sessions reduced in control group but there is significant reduction in experimental group which it shows effectiveness of metacognitive therapy in this research.

Therefore, effectiveness of applying multivariate statistical method in the field of metacognitive therapy on reduction of variables is stated in table 2 shows the significant differences between scores of experimental and control group after covariance intervention of pretest by using covariance analysis method. Through first hypothesis it was predicted that metacognitive therapy reduces the mean scores of PTSD symptoms between survivors in experimental group in both posttest and follow up assessment. Regarding to the covariance analysis findings in table 2, first hypothesis is accepted ($p \leq 0.001$). In addition the effectiveness of intervention in posttest was 0.63 and follow up assessment 0.6.

Through second hypothesis it was predicted that metacognitive therapy reduce the mean scores of depression symptoms between survivors in experimental group in both posttest and follow up assessment. Regarding to the covariance analysis findings in table 2, second hypothesis is accepted ($p \leq 0.001$). In addition the effectiveness of intervention in posttest was 0.59 and follow up assessment 0.57. Through third hypothesis it was predicted that metacognitive therapy reduces the mean scores of breached memories symptoms between survivors in experimental group in both posttest and follow up assessment. Regarding to the covariance analysis findings in table 2, third hypothesis is accepted ($p \leq 0.001$). In addition the effectiveness of intervention in posttest was 0.66 and follow up assessment 0.61. Through fourth hypothesis it was predicted that metacognitive therapy reduce the mean scores of lack of emotion control symptoms between survivors in experimental group in both post-test and follow up assessment. Regarding to the covariance analysis findings in table 2, fourth hypothesis is accepted ($p \leq 0.001$). In addition the effectiveness of intervention in posttest was 0.57 and follow up assessment 0.56.

Table1. Descriptive statistics and comparing variables in pre, post and follow up assessments

		N	Pretest (Mean±SD)	Posttest (Mean±SD)	Follow up (Mean±SD)
PTSD	Experimental	15	147.07±9.66	84.8±13.74	96.87±12.08
	Control	15	144.07±9.32	114±12.92	124.93±13.28
Depression	Experimental	15	19.6±3.02	12.27±1.91	12.87±1.96
	Control	15	19.2±3.14	16.67±2.26	17.2±2.51
Breached memories	Experimental	15	23.67±5.38	12.73±2.86	13.87±2.39
	Control	15	23.47±3.23	19±2.27	20±3
Lack of emotion control	Experimental	15	24.87±4.67	15.87±1.88	14.87±3.36
	Control	15	25.13±3.66	19.93±2.09	21.07±3.33
Interpersonal difficulties	Experimental	15	5.73±1.75	2.53±0.915	2.47±0.834
	Control	15	6±1.93	5.2±1.21	5.53±2.17

Table2. Analysis of covariance intervention effects of post and follow up assessment

Variable	Power	Depend Variable	df	Mean square	F	p-Value	Effect size
PTSD	1	Posttest	1	7008.213	44.652	0.001	0.632
		Follow up	1	6153.891	39.62	0.001	0.604
Depression	1	Posttest	1	138.560	37.75	0.001	0.592
		Follow up	1	146.200	34.621	0.001	0.571
Breached memories	1	Posttest	1	299.086	52.938	0.001	0.662
		Follow up	1	286.077	43.254	0.001	0.616
Lack of emotion control	1	Posttest	1	120.730	35.566	0.001	0.568
		Follow up	1	277.168	34.532	0.001	0.561
Interpersonal difficulties	1	Posttest	1	52.352	44.538	0.001	0.623
		Follow up	1	63.267	39.039	0.001	0.591

Through fifth hypothesis it was predicted that metacognitive therapy reduce the mean scores of interpersonal difficulties symptoms between survivors in experimental group in both posttest and follow up assessment. Regarding to the covariance analysis findings in table 2, fifth hypothesis is accepted ($p \leq 0.001$). In addition the effectiveness of intervention in posttest was 0.62 and follow up assessment 0.59. The main goal of this survey which was effectiveness of metacognitive therapy on reduction of PTSD symptoms has been investigated and accepted. Furthermore the findings showed that metacognitive therapy has substantial reduction in mean scores of depression, breached memories, lack of emotion control, interpersonal difficulties for control group in post-test and follow up assessment (two-month follow up) ($p \leq 0.001$).

Discussion

In the present study the effects of metacognitive therapy in reducing PTSD symptoms was the main objective, tested and verified. The results showed metacognitive therapy, depression scores, breached memories, lack of emotion control, interpersonal difficulties, in the experimental group than the control group in both post-test and follow was significantly reduced.

Post-traumatic stress disorder (PTSD) is anxiety disorder which follow after encountering with sever tension. As it was told before many theoretical and therapeutic rules explained and treated PTSD patients and some of them tolerated heavy criticism. Through this procedure new movements formed such as Wells's metacognitive model. This model is on the basis that following unpleasant event, domestic survival sense of individuals creates a metacognitive plan. This can guide

one's future cognition and action to encounter with potential threat. In this model metacognitive thoughts come into account as an essential activation of attentive-cognitive syndromes which lead to negative explanation and interaction of individual from symptoms, thoughts and attention styles that consequently increase the risk processing. By using counter behavior, prevent to perform cognitive which is able to return in normal situations with non-threat process [12]. Findings of current study are consistent with previous studies. Some of them are mentioned here: regarding to first hypothesis based on effectiveness of metacognitive therapy on reduction of PTSD symptoms, finding in this survey is consistent with Wells and Sembi's studies [12]. Wells and Sembi investigated the effectiveness of metacognitive therapy by using case study A-B plan on eight patients who were affected by PTSD followed by stressful events such as murder, robbery and sex abuse [13]. Moreover findings are consistent with Fisher and Wells studies about effectiveness of metacognitive therapy on obsessive disorder [18]. In order to second hypothesis based on effectiveness of metacognitive therapy on depression, findings of this study is consistent with Wells and Sembi's studies which showed reduction of depression symptoms after metacognitive therapy [12]. Also findings of current study are consistent with Bahrami's study about effectiveness of emotion-metacognition therapy with drug compare to standardized therapy on reduction of manic-depression symptoms in bipolar patients [14]. Findings of current study is consistent with Bakhtavar's study about effectiveness of behavioral-metacognition therapy on reduction of PTSD symptoms between war-injured of Iran-Iraq [15]. Wells study was about major depression disorder (MDD) by using attention training techniques on four patients showed that intervention is effective as a

potential therapy for PTSD [19]. Moreover Rees and van Koesveld's investigation on twelve patients with obsessive-compulsive disorder (OCD) (21-58 age range); Wells's metacognitive model was performed in group [20].

Through applied dimensions, importance of this survey shows that PTSD is performed as a major concern about health of individuals in different domains of mental, social and family. Continuous process of this PTSD makes individuals, family and society to a huge compensation. Therefore a short term therapy with low cost can be helpful and reduce many problems of patients. On the other hand according to high number of accidents in our country and PTSD as a common disorder, this survey investigated the effectiveness of metacognitive therapy on reduction of PTSD symptoms between accident survivors of Shahr-e-Kord. Regarding to the effectiveness of metacognitive therapy on reduction of PTSD symptoms, breached memories, and lack of emotion control, interpersonal difficulties, this method as a short term therapy, lack of need to high profession and extensive training in CBT and also low cost method suggests:

-Metacognitive therapy can be applied in all institutes of mental health intervention and psychological disorders.

-In order to increase the social, career, family function and life satisfaction, this plan can be applied as a schedule of counseling centers.

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-Make relation with centers which are familiar with accident survivors, can be useful for this plan.

Because of executive restriction, we have low number of participants in sample. It suggests that this research can be performed in large number. Personal and psychological characteristics and family factors were not stated in this study so it suggests that next studies can consider these factors. In current study pretest and posttest were assigned in experimental and control group. It suggests that other patterns like Salmon four-group design can be useful for controlling the internal and external validity like experimenter effect, maturation.

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Authors' Contributions

All authors had equal role in design, work, statistical analysis and manuscript writing.

Conflict of Interest

The authors declare no conflict of interest.

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