Original Article

The Effect of Metacognitive Therapy on Reducing Anxiety and Depression among Patients with Traumatic Stress Disorder

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Abstract

Introduction: Metacognitive therapy for post-traumatic stress disorder (PTSD) has been developed based on the role of meta-cognitive processes and beliefs in anxiety disorders. In this study, the effectiveness of meta-cognitive therapy on PTSD has been investigated.

Method: This quasi-experimental study with pre-test and post-test was carried out. The sample consisted of patients with PTSD who referred to Professor Moharri Hospital in Shiraz (N=12). Participants were selected using a structured clinical interview (SCID-I). Sample subjects underwent individual meta-cognitive therapy in 10 sessions. Depression, Stress, and Anxiety Scale was used as a measurement tool in pretest, posttest and follow up. Data were analyzed using descriptive statistics and dependent t-test.

Results: According to the results,learning metacognitive skills and coping strategies of metacognition reduces the symptoms of mental illnesses such as anxiety, depression and tension in people with PTSD ($p<0.05$).

Conclusion: Metacognitive therapy is an effective therapeutic approach that has resulted from systematic modeling and hypothesis and has resulted in techniques whose effectiveness in scientific studies has been proved.

Declaration of Interest: None

Keywords:Posttraumatic stress disorder, Meta-cognitive therapy, Anxiety, Depression, Stress.

Introduction

One of the most common anxiety disorders is post-traumatic stress disorder (PTSD) that occurs after intense stressful events and leads to several disabling symptoms in an individual (1, 2). PTSD has been considered as a separate diagnostic class since 1980 (3).

Various data are available on the prevalence of PTSD, which indicates the importance of research in the treatment of this disorder (4). Several theoretical formulas have been put forward to explain its symptoms and psychotherapy has been widely used for its treatment (3, 5, 6).

PTSD treatments may involve pharmacological approaches and cognitive behavioral therapies based on cognitive and learning principles. PTSD psychological treatments, such as long-term imagined exposure to harmful event memories as well as re-organization of assessments and beliefs from injury experiences (7,8) have been shown to be very effective in this regard. Therapeutic exposure has recently been identified as the first line of treatment for PTSD and its clinical effectiveness has been identified in several studies (9).

In comparative studies, exposure treatments alone and cognitive impairment without exposure have been shown to be effective too. The results of the meta-analyzes have shown that patients recover with the help of these treatments. However, prolonged impression exposure is uncomfortable and not enduring by many patients (1). Additionally, the completion of these treatments requires a high degree of a given therapist's skills and PTSD remains a difficult disorder for treatment (9). Hence, the need for short and effective treatments that do not require high levels of expertise is needed (8,10). A treatment that is more widely available, less stressful and potentially could be more effective (4, 8, 9).

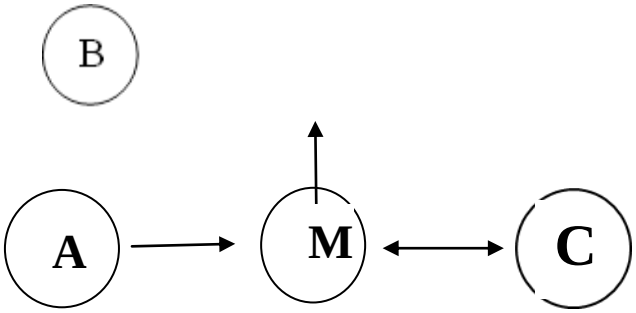
One of these therapies is metacognitive therapy, which offers a new and short-lived method for treating PTSD (11). Metacognitive treatment suggests that people are caught up in the trap of emotional distress because their meta-cognition leads to a specific pattern of response to internal experiences that results in the continuation of negative excitement and strengthening negative beliefs.This model is called "Cognitive Attention Syndrome" (CAS), which includes conceptual extreme processing as concern, rumination, fixed attention and self-regulatory strategies or maladaptive coping behaviors (11,12).

The meta-cognitive models of psychiatric disorders consider worries as the main component of cognitive-attention syndrome (6) which block natural emotional processing (8) and is based on the model of self-disciplined performance. Treatment based on the metacognitive model does not require conceptualization and reorganization of thoughts and beliefs about disaster; instead, it focuses on eliminating the Cognitive Attention Syndrome (CAS) (11).

In the metacognitive model (8,9,10,11,12,13), worry and rumination disrupts post-traumatic recovery processes and leads to persistent sense of threat and signs of PTSD (12). In metacognitive therapy, the role of meta-cognitive beliefs in Psychological disorders has been developed through the information-processing model (8,9,10,11,12,13).By placing the metacognitive beliefs in the center and substituting the negative experience of a thought or belief for the

activator event, metacognitive therapy provides a new formulation of the ABC pattern of cognitive therapy.

This new formulation, entitled A-M-C, is presented in the following way (12).



Emotional Consequences=C
Metacognition and CAS=M
Stimulating (inward) =A

The effectiveness of metacognitive therapy has been shown in several studies. Wells et al., (14) treated six patients with PTSD using the A-B plan followed by 1, 3, 4, 6, and 18 months. Treatment has been accompanied by a significant reduction in symptoms of anxiety and disorder. The average improvement in symptoms based on the effect scale of events was 83%. Wells et al., (11) treated 12 patients with 8-sessions of PTSD, which were significantly improved and were statistically significant for signs of anxiety and depression. The use of standardized recovery criteria indicated that 89 % of patients have improved on the basis of the impact scale of events in the follow-up of 6 months.

In a randomized controlled trial, Colbear et al., (15) categorized PTSD patients into two metacognitive therapies, in which 80% of the patients were treated for complete recovery and 10% had a relative improvement. Fisher et al., (16) in a study using a few basic lines A-B, treated patients with major depression in 6 to 8 sessions of weekly meta-cognitive therapy. Significant recovery was observed in depression and anxiety.

Wells, et al., (17) compared the metacognitive therapy and applied relaxation in 12 patients with generalized anxiety disorder. Results in both post-test and follow-up of 6 and 12 months were in favor of metacognitive therapy.

Wells et al., (18) tested the effect of metacognitive therapy on 10 patients with generalized anxiety disorder. Treatment was performed in 12 sessions of 45-60 minutes. Half of the patients had more than one diagnosis and 40% of them had criteria for major depressive disorder. The results of this study showed that patients had a significant improvement in the subscales of depression, anxiety and stress. The overall improvement in posttest was 87.5% and it was 75% in the follow up of 6 and 12 months.

Heidenet al., (19) examined the effectiveness of metacognitive therapy on generalized anxiety disorder. For this purpose, 126 patients were divided into three treatment and control groups and they were treated for 14 sessions. Patients in the post-treatment and follow-up groups showed significant improvement. Vakili et al., (20) treated a patient with PTSD with meta-cognitive therapy. Metacognitive therapy caused a significant reduction in anxiety, depression and tension in the patient. Bakhtavar et al., (21) performed the effectiveness of meta-cognitive therapy on reducing the severity of PTSD symptoms. The study was performed on 15 patients with PTSD who had been treated for 8 sessions. Post-treatment recovery was 52%, followed by 50% follow-up. Due to

limited number of studies on metacognitive therapy of accidental PTSD disorder and the low sample size of previous studies, it was decided to deal with this issue in this study.

Methods

In the present study, participants were selected from individuals suffering from accidental post-traumatic stress disordercame to professor Mohairi Hospital in Shiraz for treatment.The design of this research is a quasi-experimental design with pre-test and post-test. The sample size consisted of 12 respondents who had a psychiatrist diagnosis with criteria for posttraumatic stress disorder. Inclusion criteria for participants in the therapeutic group were having at least high school diploma, theage range of 20-50 years, and the ability and willingness to cooperate in the research.

Research tools

Structured Clinical Interview (SCID)

Structured Clinical Interview (SCID) is a tool for diagnosis based on the criteria of DSM-IV (22). The validity and reliability of this tool have been reported in various research papers (23). Zanarini et al (24), have reported a diagnosis reliability of Kappa evaluators to be more than 0.7. In the Bakhtiari study (25), experts and professors of clinical psychology confirmed the validity of this tool. The test retest was 0.95 one week away.

Depression Anxiety Stress Scale (DASS-21)

This scale is a self-report scale with 21 items used to measure depression, anxiety and tension developed by Lovibondet al., (26). The characteristic of the third scale (tension) is chronic nonspecific excitation, which represents a coherent, independent scale. Lovibondet al. (26) used non-clinical samples to make this scale. Each sub-scale consists of 7 items. Early evidence suggests that this scale has sufficient convergent and differential credibility. Correlation between Beck Anxiety Inventory and the subscale of Anxiety Scale in this study was equal to 0.81 and correlation of Beck Depression Inventory with Depression Scale of 0.74 was considered. Cronbach's alpha, was calculated for all three sub-scales of depression, anxiety And the stress is 0.84 and 0.91 respectively. The internal consistency of the DASS scale in an Iranian sample, performed by Sahebi et al., (27) was calculated using Cronbach's alpha and the results are as follows. Depression Scale 0.77, Anxiety Scale 0.79, Stress Scale 0.78.

Meta-cognitive therapy was performed for 10 sessions, each lasting 60 minutes and was performed individually and it was arranged that no other psychological treatment should be performed on patients during the metacognitive treatment period type and dosage of drugs used by patients in case of consumption remained constant during treatment. After the end of the treatment sessions, immediately after the follow up and follow up in 2 months, the questionnaires were re-executed.

A summary of the nature of the treatment and treatment stages of PTSD disorder based on meta-cognitive therapy:

Session 1: Developing a Case Formulation, Introducing the Model and Preparing for theUse of Wound Healing Metaphor,Challenging Negative Beliefs about Symptoms, Practicing detached mindfulness, Introducing Worry.

Homework: Practice detached mindfulness and postponing worry.

Session 2: Homework Review, continue preparation as needed, Analysis of the Benefits and Disadvantages of Concern / Rumination, Keep up the challenge with negative beliefs about symptoms. Homework: Practice detached mindfulness, and postponing worry.

Session 3: Homework Review, Challenging Positive Beliefs about Rumination and Worry, Postponing Concern and Expanding Its Uses, Investigating and Stopping Thoughts.

Homework: Continue practicing detached mindfulness, and postponing concerns along with expanding its applications / trying to suppress thought.

Session 4: Review Homework, Expand Applications for Deferred Worry / Rumination, Challenge with Remaining Positive Beliefs About Rumination and Worry, and Negative Beliefs about Symptoms, Investigate and Begin Removing Other Noncompliant Coping Strategies

Homework: Continue generalizing the technique to delay worrying / rumination and stop specific non-conforming coping behaviors.

Session 5: Homework Review, Exploring the Nature of Conceptual Processing. Is another type of processing changed and still in progress? Investigating Avoidant and Non-Adaptive Coping and Removing Work on Remaining Beliefs about Concern and Rumination

Homework: Keep worrying and rumination. Eliminate nonconforming coping, especially avoidance.

Session 6: Homework Review, Benefits Analysis, and Disadvantages of Monitoring Threats, Challenging Positive Beliefs about Monitoring Threats, Stop Monitoring, Threats, and Alternatives

Homework: Keep worrying and rumination. Practice awareness of threat monitoring and put it aside.

Session 7: Homework Review, Refocus Training, Challenging Attention to Positive and Negative Beliefs

Homework: Reverting to the pre-traumatic event and adopting new strategies, reviewing the remaining uncoordinated coping.

Session 8: Homework Review, Work on Concerns and Rumors, Coping and Working on Remaining Beliefs, Getting Started on the Outline of Treatment

Homework: Asking the patient to write a treatment summary sheet, continuing to avoid rumination concerns and monitoring the threat.

Session 9: Homework Review, Working on Residual Issues, developing a New Program to Deal with Annoying Thoughts and Symptoms, Completing a Treatment Outline

Homework: Practice implementing a new program.

Session 10: Review Homework, Reinforce the New Schedule and Describe It Using a Hypothetical Examination Example, Any Remaining Beliefs, Scheduling Sessions

Homework: Identifying the Continuing Use of Therapy.

Results

The distribution of samples is as follows: 3 single men, 2 married men and 3 married women with a diploma and alower diploma, 1 male single, 2 single women and 1 married woman with higher education degree. Theywere selected, whichreferring to Professor Moharri Hospital in Shiraz.

Table 1 presents the mean and standard deviation of subjects' scores on pretest, posttest, and follow-up on the Depression Anxiety Scale.

Table 2 shows the results of t-test related to subscales of anxiety, depression and tension at the end of treatment and follow-up. A look at the value of obtained as well as the significant level indicates that metacognitive therapy has improved anxiety, depression and tension in patients.

Anxiety disorders are the highest in the general population. According to the results of this study, it can be concluded that learning metacognitive skills and coping strategies of metacognition reduces the symptoms of mental illnesses such as anxiety, depression and tension in people with PTSD, and can be effective. This treatment was optimistic about a wide range of diseases.

Table 1. Descriptive Indices of Depression - Anxiety - Stress Scale

Sub scale	The level	Mean	Standard Deviation
Depression	pre-test	18/50	2/93
	Post-test	13/66	2/34
	Follow up	13	2/04
Anxiety	pre-test	19/58	2/57
	Post-test	14/08	1/83
	Follow up	13/58	1/62
Stress	pre-test	21/08	2/39
	Post-test	15/66	1/43
	Follow up	15	1/27

Table 2. The results of the t-test of the DASS-21 scale

scale		M	SD	t	dF	P
Anxiety	Pre-test / Post-test	5.50	1.93	9.86	11	0.01
	Pre-test / follow up	6.00	2.08	9.95	11	0.01
Depression	Pre-test / Post-test	4.83	1.69	9.86	11	0.01
	Pre-test / follow up	5.50	1.83	10.38	11	0.01
Tension	Pre-test / Post-test	5.41	1.62	11.57	11	0.01
	Pre-test / follow up	6.08	1.83	11.50	11	0.01

Discussion

The findings of this study indicate that metacognitive therapy is effective in the treatment of PTSD and has been shown to reduce depression, anxiety and tension in patients. This finding is consistent with the results of numerous studies (15,16,17,18, 21, 29).

Anxiety disorders have highest rate in the general population. And the effectiveness of this treatment can be enjoyed on a wide range of diseases. Improving metacognitive beliefs helps patients shape a new relationship with their thoughts and enable them to modulate meta-cognition that enhances the maladaptive behavior of negative, repetitive thoughts. In addition, patients were trained in ways that could be confronted with worries in the future, if necessary, and this is another reason for

the sustainability of the outcome of follow-up treatment. MCT to change the style of thinking, attention and behavior maladaptive coping reduce depressive symptoms of PTSD, and this shows the effectiveness of the technique of meta-cognitive therapy in the context of increased coping skills for patients to change their thoughts and maladaptive behaviors and reduce the effects and damage. Also, stress, which is a common symptom of PTSD, intensifies and persists with the style of thinking, attention, and avoidance behaviors of the patient after exposure to injury. Techniques used in the treatment of metacognition, including shifting attention and re-focusing attention on a non-threatening situation, reduce the patient's tension. Also, techniques such as mind-boggling consciousness and delaying anxiety will shorten and limit the duration of a patient's tension. The overall conclusion that can be deduced from this study is that metacognitive therapy is an effective therapeutic approach that has resulted from systematic modeling and hypothesis and has resulted in techniques whose effectiveness in scientific studies. It has been shown that the findings of such studies can provide clinical research psychologists with new strategies in two areas of prevention and treatment.

According to the results of this study, it can be concluded that learning metacognitive skills reduce the symptoms of mental illnesses such as anxiety, depression and stress in people with PTSD, and the efficacy of this treatment on a wide range of diseases is in an acceptable range.

The effective implementation of metacognitive therapy requires the use of several basic skills. Metacognitive therapy is based on four basic skills that they were mentioned above. In this study, the treatment plan was performed according to the above steps and a plan for the treatment of post-traumatic stress disorder were presented. The results of this study indicate that metacognitive therapy reduces the symptoms of anxiety disorders.

One of the limitations of this research is the limited research into accidental PTSD. It is suggested that meta-cognitive therapy should be more widely studied in the context of other disorders. Future studies will select a larger sample and future research will be conducted with a pilot design and with a control group.

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