

Effectiveness of Metacognitive Therapy on Reducing Depression and Metacognitive Beliefs in Patients with Major Depressive Disorder¹

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ABSTRACT

The aim of this study was to investigate the effectiveness of metacognitive therapy in patients with major depressive disorder. The population of this study included all patients admitted to Army Hospital No.520 recognizing MDD that 30 individuals of population were selected by using random sampling into experimental and control groups (n = 15 experimental and 15 control). The research method was a quasi-experimental design in which pre-test -post-test with control group design was used. The instrument consists of metacognitive therapy, Beck Depression Inventory (BDI-II) and the Metacognition Questionnaire (MCQ-30). Data were analyzed with inferential statistics methods including t-test for independent groups and Anova (ANCOVA). Results in this study showed that meta-cognitive therapy reduces emotional symptoms (sadness, frustration, guilt, self-loathing, crying, restlessness, social withdrawal and irritability), cognitive symptoms (pessimism, expectation of failure, feeling of punishment, self-accusation, suicidal thoughts, indecisiveness, worthlessness, and difficulty in concentration), physical symptoms (disability, change in sleep patterns, fatigue, change in appetite and sexual interest) and metacognitive beliefs.

KEYWORDS: Metacognitive therapy, major depressive disorder and metacognitive beliefs.

INTRODUCTION

The term "depression" is used for various purposes like describing mood states or a concept in classification of mental disorders. Mood is a pervasive and sustained emotional disposition that is experienced internally and affects the individual's behavior and understanding of the world (1). Many patients either mentally or physically suffer from depression and according to statistics it can be said depression forms a considerable part of psychiatric illnesses. Greist & Jefferson (1992) suggests that when we diagnosed the disease as depression, we mean a durable enough disorder with specific signs and symptoms which have bad effect on the person's performance, creates confusion or consists of both of them (2). Beckham (2000) believes that depressive disorders are a group of mental disorders whose patients have depression without mania which has different intensity, such as major depressive disorder and dysthymic disorder (1). It can be said that the exact depressive mechanisms have not been explored yet. But overall, some specific reasons for depression like genetic factors, biological factors, environmental factors (psycho - social) life events and environmental stress, personality factors, learned factors, negative thinking and consuming drugs can be mentioned. Because many factors can lead to depression, there are various therapies for depression (2). Yoonesi & Rahimian Boogar (1387) state about psychological therapies: "Despite various therapies for most mental disorders, meta-analyses show that still a significant number of patients with these disorders don't respond to these therapies or show modest improvements (3). In order for a therapy to be more widely available, it is necessary to be simpler and less annoying in addition to be in a short term and yet doesn't require great expertise. One of these altered and relatively new techniques is Metacognitive Therapy. Metacognitive therapy is a treatment that is readily available everywhere for Patients (4). Metacognitive therapy (MCT) just like the cognitive-behavioral model, believes that psychological disorder is the result of distorted thinking; however, these two approaches have different explanations about the nature and causes of distorted thinking. Metacognitive theory states that psychological disorders are the product of metacognitive schemas which are consistent with the thoughts and beliefs that cognitive-behavioral therapy emphasizes them (CBT) (5).

Metacognitive therapy is a new emerging approach that effectiveness of it has been investigated in many scientific studies. Among them, Andooz (2013) in a study stated that the therapeutic approach based on Wells'

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metacognitive model was effective in the treatment of obsessive - compulsive disorder. Also the rates of depression, anxiety and stress also decreased in patients (6). In a randomized trial, metacognitive therapy was compared with applied relaxation in the treatment of patients with generalized anxiety disorder (7). Results showed that metacognitive therapy was superior to applied relaxation in making improvements in anxiety, worry and negative metacognitive beliefs. Wells et al (2008) in an open clinical trial on patients with chronic post-traumatic stress disorder, treated 12 patients in an average of 8/5 sessions. In these patients, duration of PTSD disorder, ranged from 6 to 39 months. Substantial and statistically significant improvement was found in symptoms of post-traumatic stress, anxiety and depression (7). Wells and King (2006) in an open trial treated patients with generalized anxiety disorder according to DSM-IV within 3 to 12 sessions, each session lasted 60-45 minutes. Using the criteria of clinically significant change in trait anxiety showed that 87% of patients were improved after treatment and all patients met the criteria of significant clinical improvement (8). Simons, Schneider and Herpertz-dahlmann (2006) studied the effectiveness of metacognitive therapy on obsessive-compulsive disorder in children and adolescents. All the 10 children randomly assigned to either metacognitive therapy situations or confrontation and response prevention. However, data suggest that this kind of therapy can be a useful alternative for confrontation and response prevention (9). Wells & Sembi (2004) examined six consecutive patients with PTSD according to DSM-IV by using A-B design with follow-up at 3 and 6 months after treatment and at longer distances, 41-18 months after treatment. In all cases treatment was associated with significant reductions in traumatic stress symptoms, anxiety and depression were. Modest improvement in symptoms based on the Impacts of Events Scale (IES) was %83 and %69 in Pennsylvania Questionnaire. Papa Georgiou and Wells (1998) studied the effects of attention training in three patients with Hypochondriasis. All patients thus treated, showed major reduction in the frequency of health-related concerns, beliefs about illness and focus on the body (10).

The metacognitive model of depression (Wells, 2009) suggests that depression is made of the activation of depressive rumination and maladaptive coping behaviors in response to sad or negative thoughts (11). Ruminants include insistence on negative thinking about the reason and meaning of sadness or depression (12)(13). Wells (2009) explains that the metacognitive model and therapy of major depressive disorder (MDD) focuses on understanding the causes of maladaptive rumination and removing this maladaptive process. Rumination is the main feature of the Cognitive Attentional Syndrome (CAS) which is activated in response to negative and sad thoughts and experience of loss. Cognitive Attentional Syndrome causes persistence of sadness and negative beliefs and leads to depressive periods (11). Although numerous studies focused on metacognitive therapy but few studies investigated the effect of this therapeutic approach on treatment of obsessive - compulsive disorder. Among the studies conducted in this field within the country, the research of Hashemi, Aliloo & Hashemi Nosratabad (2010) can be pointed out. Their results showed that metacognitive therapy that focuses on the control of the governing processes of cognition rather than focusing on the content of it can be effective in the treatment of patients with depression. So that the treatment caused significant changes in patient's symptoms and also significant and substantial changes in symptoms of depression, anxiety and rumination in depressed patients (14). In the context of MDD, the results of a study (Wells et al 2008) have provided preliminary evidence on the effects of metacognitive therapy. In this study with the A-B multiple-baseline design, patients were treated within six to eight weeks of metacognitive therapy sessions. In 6-month follow-up all patients meet the criterion of standard improvement in Beck Depression Inventory (7). Wells et al (2008) followed the multiple-baseline study that mentioned a few lines above by studying the effects of metacognitive therapy in patients with major depressive disorder through an open trial. Therapy was accompanied with considerable improvement in symptoms of depression and anxiety that was assessed through the grading by interviewer and self-assessment scale. Treatment led to major reduction in rumination and maladaptive metacognitive beliefs. The use of formal criterion to determine significant clinical change and improvements based on the Hamilton depression scale in samples treated showed that %75 of patients after treatment and %66 in the 6-month follow-up showed full recovery (7). Papageorgiou and Wales (2000) studied the effects of attention training in four patients with recurrent major depressive disorder. All the patients showed a significant improvement in anxiety and depression. Treatment outcomes were maintained at 3, 6 and 12 months follow-ups after treatment. Diagnostic screening of the 12-month follow-up revealed that none of the patients had the diagnostic criteria for major depressive disorder. According to the discussions, the research ahead studies the efficacy of metacognitive therapy in major depressive disorder and modifying metacognitive beliefs of these people (15).

RESEARCH METHOD

Present study is a quasi-experimental design in which pre-test -post-test with control group design was used. The population of the study consists of all patients admitted to Army Hospital No.520 recognizing MDD. 30 individuals of population were selected by using random sampling into experimental and control groups (n = 15

experimental and 15 control). The study was performed in all patients referring to the counseling center of the Army Hospital No.520 in the period of the study that were self-introduced, other-introduced and referral from a psychiatrist and were measured with observation, clinical interview based on DSM-IV-TR, interviews formulation of major depressive disorder (proposed by Adrian Wells) and Beck Depression Inventory (BDI-II) which among them 30 people (patients with MDD) were chosen randomly. These 30 subjects were randomly assigned to experimental and control groups with 15 people in each. The criterion for participating the study were gaining high score (30 or above 30) in Beck Depression Inventory, a psychologist diagnosis according to the formulation of the interview, the interview based on DSM-IV-TR and lack of getting any medical treatment and psychological intervention (At least 6 months before the study began and now), not suffering from psychotic disorders, substance abuse, personality and being in the age range of 18 to 55 years, with the consent of a person having at least high school graduates and observing moral codes. The control group received no intervention during the test and they were assured that after performing the treatment on the experimental group their complete the treatment will be followed up. Also 8 sessions (based on Wells model) was designed for the experimental group that were conducted in the Army Hospital No.520 individually and twice a week. After selecting eligible patients and replacing them, they were randomly assigned into control and experimental groups and after holding the briefing session the pre-test was done; Then 8 sessions of metacognitive therapy were conducted for each member of experimental group individually. The control group received no intervention at this stage. Then post-test was taken from both the control and experimental groups. The whole process took about 5 months of research, including Phase I: Finding patients and performing pre-test Phase II: treatment process and Phase III: performing post-test. Given the assumptions of this study, data collected with descriptive and inferential statistical methods were analyzed. The indices of the descriptive statistics were frequency, frequency percentage, mean and standard deviation and in the inferential statistical the assumptions have been analyzed with t-test for independent groups, ANCOVA (analysis of covariance). The tools used for data analysis was SPSS software version 19.

Data collection tool

Beck Depression Inventory (B.D.I-II): This Questionnaire is a revised form of the Beck depression inventory which had been developed in 1996 to assess the severity of depression symptoms. Beck Depression Inventory is one of the most widely used psychiatric diagnostic tools. Beck Depression Inventory has 21 Questions and is designed for assessing severity of depression in adolescents and adults. The clinical observations to describe patients are essentially composed of two states or attitudes to specify the degree of depression with a four-degree range (from 0 to 3). The maximum total score is 63 and minimum is zero. These questionnaires was studied on America's population in 1961 and then on the population of England in and also studied on the population of Iran in 1972 and the performers have validated this questionnaire to forecast and diagnose depression. The results of Partoee in 1353 in relation to the prevalence of depression among college students of Tehran University showed that the Beck inventory has a stable validity. He also standardized this questionnaire in 1975 on the population of Iran. The coefficient of internal consistency (Cronbach's alpha) of the questionnaire is reported between 0/69 and 0/91 and the rater reliability is between 0/85 and 93/0 (16). Psychometric characteristics of the revised form of the questionnaire are obtained by Qasemzadeh et al (2005) which their result indicates high reliability and validity of the questionnaire (16).

Metacognition Questionnaire (MCQ): Metacognition questionnaire is a 30 item scale which is designed by Wells and Cartwright-Hatton (2004) and is made to measure positive and negative beliefs of the in the individual toward worry. Each subject answer these items in multiple-choice way (do not agree to the much agree). Metacognition questionnaire has five components including: 1-Positive beliefs about worry 2- Cognitive trust 3- Cognitive awareness 4- Negative beliefs about the uncontrollability of thoughts 5-Beliefs about need to thoughts control. Wells and Cartwright-Hatton results indicated that the questionnaire has high internal consistency (Cronbach's alpha coefficient 72/0 to 93/0) and test-retest reliability has reported 0/87 over 4 months. Shirin Zadeh et al in Iran have reported the Cronbach's Alpha 0/71 to 0/87 and the test-retest reliability within 4 weeks 0/59 to 0/83. The range of responses for each question is specified from (do not agree) to (completely agree) that respectively have grade 1 to 4 (17).

Metacognitive therapy (MCT): The therapeutic package (the treatment structure) of the metacognitive model of depression consists of attention training technique. In this model, the attention training technique is used as a tool to promote meta-awareness, increased flexible control and releasing cognitive resources from depressive thinking styles. In addition, using attention training techniques regularly give an opportunity to the patient to exercise every day and in this way, confront with the apathy and immobility caused by depression. Metacognitive therapy also emphasizes on discontinuation of the rumination process and changing negative metacognitive beliefs. The therapeutic process usually takes between 5 to 10 sessions and includes these components: 1- Case formulation 2-

Familiarizing patients with the therapy 3- Attention training and detachable awareness attention training 4- Challenging negative metacognitive beliefs (uncontrollability, disease pattern) 5- Challenging positive metacognitive beliefs about rumination 6- Elimination of remaining traumatic behaviors and changing the process of threat detection 7- Strengthening the new applications of process and 8- prevention of recurrence.

Research findings

Statistical findings:

Table 1: Mean and standard deviation of depressive components and metacognitive beliefs scores in control and experimental groups

Variable	Stage	Group				
		Experimental		Control		
		M	SD	M	SD	
Affective symptoms	Pre-test	7.86	3.33	6.66	2.99	
	Post-test	4.80	2.04	6.80	3.02	
Cognitive symptoms	Pre-test	9.60	3.15	8.86	2.38	
	Post-test	5.93	2.28	8.13	2.50	
Somatic symptoms	Pre-test	10.13		2.29	7.93	3.15
	Post-test	5.60	2.44	7.73	2.84	
Metacognitive beliefs	Pre-test	37.86		2.72	33.40	3.99
	Post-test	27.13		4.22	32.53	3.77

Table 1 shows the mean and standard deviation of the components of depression and metacognitive beliefs in both experimental and control groups at pre-test and post-test. Considering the means show the effect of metacognitive therapy on all variables of the study (emotional symptoms, cognitive symptoms, somatic symptoms and metacognitive beliefs).

Inferential findings:

Hypothesis 1: Metacognitive therapy is effective in reducing emotional symptoms of the clients.

Table 2: Analysis of covariance of post-test scores for emotional symptoms in experimental group

Effect source	SS	df	MS	F	P	Eta square
Intercept	2.49	1	2.49	1.33	0.25	0.04
Pre-test	366.12	1	136.12	72.52	0.00	0.72
Condition	58.05	1	58.05	30.92	0.00	0.53
Error	50.67	27	1.87			
Total variance	1226	30				

According to Table 2, the conditions have significant effects on post-test scores ($p < 0.00$) that with eta squared consideration we can say that %53 of these changes are the effect of metacognitive therapy in experimental condition.

Hypothesis 2: Metacognitive therapy is effective in reducing cognitive symptoms of the clients.

Table 3: Analysis of covariance of post-test scores for cognitive symptoms in experimental group

Effect source	SS	df	MS	F	P	Eta square
Intercept	5.50	1	5.50	1.80	0.19	0.06
Pre-test	78.08	1	78.08	25.52	0.00	0.48
Condition	51.23	1	51.23	16.75	0.00	0.38
Error	82.58	27	3.05			
Total variance	1681	30				

According to Table 3, the conditions have significant effects on post-test scores ($p < 0.00$) that with the eta squared consideration we can say that %38 of the changes is the effect of metacognitive therapy in experimental cognition.

Hypothesis 3: Metacognitive therapy is effective in reducing physical symptoms of the clients.

Table 4: Analysis of covariance of post-test scores for physical symptoms in experimental group

Effect source	SS	df	MS	F	P	Eta square
Intercept	0.77	1	0.77	0.21	0.65	0.008
Pre-test	96.87	1	96.87	26.24	0.00	0.49
Condition	83.86	1	83.86	22.72	0.00	0.45
Error	99.66	27	3.69			
Total variance	1564	30				

According to Table 4, the conditions have significant effects on post-test scores ($p < 0.00$) that with eta squared consideration we can say that %45 of the changes is the effect of metacognitive therapy in experimental conditions.

Hypothesis 4: Metacognitive therapy is effective in modification of metacognitive beliefs of the clients.

Table 5: Analysis of covariance of post-test scores for metacognitive beliefs in experimental

Effect source	SS	df	MS	F	P	Eta square
Intercept	2.04	1	2.04	0.21	0.64	0.008
Pre-test	187.99	1	187.99	19.41	0.00	0.41
Condition	397.23	1	397.23	41.01	0.00	0.60
Error	261.47	27	9.68			
Total variance	27369	30				

According to Table 5, the conditions have significant effects on post-test scores ($p < 0.00$) that with the eta squared consideration we can say that %60 of the changes is the effect of metacognitive therapy in experimental condition.

DISCUSSION

Since the metacognitive therapy in present study reduced emotional symptoms (sadness, dissatisfaction, guilt feeling, self-loathing, crying, agitation, social isolation and irritability), cognitive symptoms (pessimism, failure expectation, feeling punished, self-accusation, Suicidal thoughts, indecisiveness, worthlessness, and difficulty in concentrating), somatic symptoms (low energy, changes in sleep patterns, fatigue, changes in appetite and sexual interest) and metacognitive beliefs, so it can be seen that metacognitive therapy leads to this efficacy and confirming the research hypotheses. The result of this research is consistent with Hashemi, Aliloo & Hashemi Nosratabad (14), Andooz (16), Bahadori et al (18), Share, Ghazali & Atef Vahid (19), Abdolah Zadeh, Javanbakht & Abdolah Zadeh (20), Khoramdel et al (21), Bahadori, Jahanbakhsh, Kalantari & Molavi (18), Abolghasemi, Hasanali Zadeh, Kazemi & Narimani (22), Mahmoudi, Goodarzi, Taghavi & Rahimi (23), Valizadeh & Hasanvandi (24), Sargolzaee, Fayazi Bordbar, Samari & Shakiba (25), Andooz (6), Wells, White & Carter (26), Papageorgiou & Wells (15), Papageorgiou & Wells (27), Cavangah & Franklin (28), Single, Ghinassi & Thase (29), Valmaggia, Bouman & Schurman (30), Fischer & Wells (31), Wells & King (8), Wells, Welford, King, Mendel & Wisely (7), Clark & Wells (32), Wells & Sembi (10), Colbear & Wells (33), Fischer & Wells (34), Rees, Van Koesyeld (35) that can be a strong support for the effectiveness of this treatment.

According to recent research findings and the results of other studies and because metacognitive therapy emphasizes on impaired thinking and shaping and continuing the emotional and affective disorders including major

depressive disorder and also according to the emphasis of metacognitive model of major depressive disorder on realizing rumination reasons and removing this maladaptive process, reduction of symptoms or depression remission can be the result of removal of rumination and it is because of this reason that rumination is the main feature of the cognitive attentive syndrome that is activated in response to sad thoughts and loss experience and because the cognitive attentive syndrome, itself causes continuation of sadness, negative beliefs and depressive periods, now with removing these factors by metacognitive therapy techniques, remission is reached and improvement of symptoms can be reduced or eliminated.

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