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The Effectiveness of Schema Therapy and Mindfulness Based Cognitive Therapy on the Rate of Using Negative Automatic Thoughts in Depressive Patients

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Abstract

Purpose: The aim of the current study was to investigate the effectiveness of schema therapy and mindfulness based cognitive therapy on the rate of using negative automatic thoughts in women with major depression in Mashhad. Participants were 36 depressed women clients, randomly selected and randomly designated to 3 groups (two experimental group and control group). **Materials and method:** This study was a quasi-experimental with a pre-test, post-test and 2 months follow-up design. Negative automatic thoughts questionnaire used to gather data about subjects negative automatic thoughts. Descriptive statistics and differential statistics (repeated analysis of variance) were employed to test the research hypothesis. **Findings:** Results showed that schema therapy and mindfulness based cognitive therapy were effective in decreasing negative automatic thoughts in women with depressive disorder. **Discussion:** schema therapy and mindfulness based cognitive therapy can significantly help depressed people to control their negative automatic thought.

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1. Introduction

Major depressive disorder (MDD) is an important mental health problem with high personal and societal costs. The estimated life-time prevalence of MDD is 16.6% (Kessler et al., 2003). The risk of recurrence is high, with figures ranging from35% in depressed patients from the general population to 85% in depressed patients from clinical samples (Hardeveld et al., 2010). Important predictors of relapse and recurrence are number of previous episodes and residual depressive symptoms (Hardeveldetal, 2010). Several studies have shown that the risk of recurrence increases with each subsequent episode (Solomon et al., 2000), a phenomenon that has become known as the "kindling effect" (Judd et al., 2000; Mueller et al., 1999; Post et al., 2014).

Globally, chronic conditions have become the most prevalent and costly of health problems, imposing a growing drain on healthcare delivery systems and healthcare financing (Center for Disease Control and Prevention, 2009; World Health Organization, 2005). Chronic conditions also deplete the physical and emotional resources of the affected individuals. Depressive symptoms and disorders are two of the most common complications of chronic illness. In fact, depression is increasingly being viewed as a chronic illness in its own right (Andrews, 2001) because depressed individuals experience high rates of symptom recurrence (Lin, Katon, VonKorff, Russo, Simon, Bush.et al, 1998) and sustained functional impairment (Hays, Wells,Sherbourne, Rogers &Spritzer, 1995). Depression can intensify pain, fatigue, self-doubt and lead to self-isolation (National Institute of Mental Health, 2008). As a mood disorder characterized by chronic sadness and feelings of hopelessness, depression has a major negative impact on one's perceived quality of life (Mullins & Dugan.1990). Several evidences have suggested that depression increases the risk of cognitive impairment and functional disability (Lebowitz et al. 1997; Charney et al. 2003). On the other hand, cognitive dysfunction during remission may also play a critical role in increasing the individual's vulnerability for the first onset, maintenance and future recurrence of depressive episodes (Gotlib, et al. 2010; Kessing, et al. 2001).

During the past years, there has been an increased interest in cognitive impairment in depression, as testimonies by numerous studies. Initially, cognitive impairment has been attributed to depressive symptoms and studies have involved patients during the acute phase of depression. However, in the last decade it has been widely reported that cognitive dysfunction remains unresolved even after remission of depressive symptoms (Reprimand, et al., 2009; Smith, et al., 2006; Biringer, et al., 2005; Paelecke-Habermann, et al., 2005; Weiland- Fiedler, et al., 2004). Because of its high prevalence and resulting disability (major depression is classified as the second greatest cause of disability, adjusted for years of life in developed countries) many treatment modalities have been used for depression.

Among the methods used to treat depression can be noted Schema Therapy and mindfulness based cognitive therapy. Schema therapy is an innovative psychotherapy developed by Young (1994) for personality disorders, chronic depression and other disorders. Schema therapy integrates elements of cognitive therapy, behavior therapy, psychoanalysis, object relations and gestalt therapy into one unified systematic approach to treatment. Group schema-therapy reduced early maladaptive schemas. In other words, group schema-therapy had significant influence on reduction of incompatible schemas: disconnection and rejection, other directedness, and over-vigilance (Malogiannis, Arntz, Spyropoulou, et al., 2014). Maladaptive schemas, according to Young, Klosko and Weishaar (2003) are defined and relate mainly to the lack of basic emotional needs met in childhood and a lack of appropriate relationships, bonds, and behaviors of important others involved in the life of a growing child, making them emotionally and psychologically vulnerable to common co-occurring conditions of dysthymia including failed and troubled major depression, anxiety disorders, personality disorders, somatoform disorders, substance abuse and drug addiction (Young, 1999).

Thimm (2010) asserted that people may permanently live within maladaptive schemas which are a pattern of established (from childhood) unstable reactions to any given situation in life. Young et al (2003), Wishman (2008) and Dobson (2010) stated that the basic assumptions of current cognitive-

behavioral therapies are not in agreement with typical characteristics of depression. Cognitive-behavioral therapy adopts a top-down approach in healing schemas and vulnerable modes, starting with for example hopelessness, then fundamental components and finally schemas (Leahy, 2004). Whereas, schema therapy employs a bottom-up approach, following the process inversely and logically, and starting with the deepest level of schema (Young, 2003). This change of approach can positively affect the patients' response to the therapy (Dobson, 2010). Overall, according to what was mentioned above, it can be concluded that current cognitive-behavioral therapies have resulted in limited rate of success and substantial reversion level; furthermore, determining the deeper levels and casual layers as an intervening variable can help reduce and treat the psychological symptoms of dysthymia disorder (Murphy, Jenifer, Gerard, Byrne, 2012).

According to the cognitive theory of depression (Beck, 1967) negative beliefs about the self, the world, and the future incorporated in stable cognitive schemas are the key vulnerability factor to depression. In most accounts of cognitive theory, dysfunctional cognitions can best be understood in terms of a hierarchical model of generality with automatic thoughts at the most superficial level, dysfunctional attitudes at an intermediate level, and cognitive schemas at the deepest level (Clark, Beck &Aflord, 1999; Segal, 1988). While depress genic cognition has usually been assessed at the level of automatic thoughts or dysfunctional attitudes (Segal & Swallow, 1994), studies assessing dysfunctional cognition at the schema level in depressed patients are sparse. One reason for this might be that schemas are usually considered as implicit cognitive structures that are not readily accessible (Segal, 1988).

Young recently revised the schema concept, emphasizing early maladaptive schemas (EMSs) as key structures in the development of psychopathology (Young, 1995). EMSs are defined as stable, trait-like, enduring beliefs about oneself and the worlds that are rooted in early childhood experiences (Young et al., 2003). EMSs are in many ways comparable to the cognitive theory concept of core beliefs, defined as the cognitive content of schemas (Clark & Beck, 1999) though there are also important differences between these two concepts (James, et al., 2004). For example, core beliefs in depression were usually divided into three broad categories (helplessness, inadequacy, and un lovability), whereas EMSs are more specific. Although the concept of EMSs provides a valuable extension to the cognitive theory of depression concepts of automatic thoughts and dysfunctional attitudes, studies relating EMSs to depressive symptoms in depressed patients are relatively sparse. To the best of the authors' knowledge, the present study is the first to investigate of schema therapy on the rate of negative automatic thoughts in major depressed.

MBCT was delivered according to the guidelines by Segal, Williams and Teasdale. Mindfulness-based cognitive therapy (MBCT) is an alternative, psychological intervention designed for prevention of relapse in recurrent depression. It is a group based, eight week training (Segal et al., 2002), consisting of meditation exercises combined with cognitive behavioural techniques. Mindfulness-based approaches have been successfully applied to a broad range of health and stress related problems (Hofmann, Sawyer, Witt, & Oh, 2010; Kabat-Zinn et al., 1992).

In preventing relapse of depression, several preliminary, mostly uncontrolled studies have shown MBCT to be efficacious in reducing depressive symptoms (Barnhofer et al., 2009; Eisendrath et al., 2008; Finucane& Mercer, 2006; Kenny& Williams, 2007; Kingston, Dooley, Bates, Lawlor, & Malone, 2007). This research extends the founding inception of MBCT, namely that the program was developed withthe purpose to prevent remission of depression and considered unsuitable for acute depression. Symptoms such as difficulty in concentration and intensity of negative thinking were hypothesized to preclude the acquisition of attention control skills centralto the training (Segal et al., 2002). For this reason, patients with recurrent depression not in remission were indeed excluded from previous studies (Ma & Teasdale, 2004; Teasdale et al., 2000).

2. Research Background

The therapist discounts experiences since childhood that support the schema by attributing them to schema perpetuation. The coping styles of patients learned in childhood have carried their schemas forward into their adult lives. Therefore, the therapist notes that, because of their schema-driven behavior, patients have never given their schemas a fair test (Young, Klosko, &Weishaar, 2003).

Montazeri et al (2013) conducted a research titled "influence of schema-therapy on reduction of depression symptoms and obsessive-compulsive personality disorder. Results showed that schema-therapy influences obsessive-compulsive personality disorders and depression. Further, follow-up sessions which were held two months after therapy showed that the reduced symptoms were still there. Lee (2007) conducted a study on 233 students and investigated 2 assumptive models in cognitive schemas which played a mediating role between social prescribed perfectionism and depression & anxiety. In the assumptive depression model, abandonment, defectiveness/shame, dependence/incompetence, insufficient self-control/self-discipline were considered as mediating variables. The primary assumptive model was not verified in the research. Even a revised model in which abandonment schema had been influenced by depression via indirect impacts of other schemas was not verified. To this end, the present research tries to investigate early maladaptive schemas in depressed, anxious, obsessed and normal individuals.

Ahmadiyan (2009) conducted a research titled: "a comparison of early maladaptive schemas in suicide-committing and non-suicide committing depressed individuals and non-clinical population": a) the two clinical groups were different from non-clinical group in all early maladaptive schemas. b) .The two clinical groups had significant difference with each other in three schemas: emotional inhibition, dependence/incompetence, and vulnerability to loss and disease and these differences were independent of patients' depression intensity. Results showed that treatment interventions influence significantly on emotional deprivation, dependence/incompetence and vulnerability schemas in suicide-committing depressed patients.

In patients with three or more previous depressive episodes, Teasdale et al. (2000) showed that MBCT resulted in a 40% relapse rate in the year following the intervention compared to 66% in the treatment as usual (TAU) condition (intention to treat analysis).These results were replicated in a second study (Ma & Teasdale, 2004). Kuyken et al. (2008) showed that MBCT was as effective as maintenance anti-depressant medication (m-ADM) in preventing relapse in patients with three or more previous depressive episodes (Kuyken et al., 2008). Patients receiving MBCT reported less depressive symptoms and higher quality of life. This finding of MBCT being equally effective as m-ADM was recently confirmed by Segal et al. (2010) in a trial, showing equal reduction in relapse risk for m-ADM and MBCT, however, only in unstable remitters.

3. Methodology

The sample consisted of 36 women with major depression which were referred to the Mashhad psychology and psychiatry clinics. Sample members were selected by convenience sampling. Convenience sampling, as the name implies is a specific type of non-probability sampling method that relies on data collection from population members who are conveniently available to participate in the study. Sample members were randomly assigned to 2 experimental and control groups. The age range of the women was 24-35 with a mean 28.58 (SD=2.56).Pre-test, post-test and controlled group experimental model is employed in the research. Independent variable of the research was Schema therapy and MBCT method and dependent variable was negative automatic thoughts. In the beginning of the experimental work and after the treatment, to determine difference in automatic thoughts between experimental and control groups, ATQ (Automatic Thoughts Questionnaire) questionnaire administered to three groups.

3.1. Measurement

Automatic Thoughts Questionnaire-B (ATQ; Hollon, S. D. & Kendall, P. C., 1980) is a 30-item instrument that measures the frequency of automatic negative statements about the self. Items are rated on the frequency of occurrence from "not at all" to "all the time". Total scores are the sum of all 30 items. Items on each factor are: personal maladjustment and desire for change (PMDC): 7, 10, 14, 20, 26; negative self-concepts and negative expectations (NSNE): 2, 3, 9, 21, 23, 24, 28; low self- esteem (LSE): 17, 18; Helplessness: 29, 30. A high total score indicates a high level of automatic negative self-statements. Several studies have demonstrated the reliability and validity of the ATQ (e.g., Dobson &Breiter 1983; Hollon& Kendall, 1980).

In evaluating the reliability of the ATQ, Burgess and Hagga (1994) found a coefficient alpha of .95 for the measure and also reported that correlations between each item and the total scale ranged from .37 to .77 and using odd and even items to assess internal reliability found a split-half reliability of .92 and a coefficient alpha of .95. The alpha was .93 in the current research.

3.2. Data Analysis

In order to test the hypotheses, we used repeated-measures analysis of variance. In these analyses, the dependent variable was negative automatic thoughts. The study employed a pretest, post-test, follow-up design and the patients in the study received a five-month, twenty-session schema therapy based on young theory in schema therapy group and mindfulness based cognitive therapy in MBCT group. The treatment protocol of ST for chronic depression is based on the basic protocol of ST developed by Young et al. (2003). The treatment protocol of ST for chronic depression can be divided into two phases: (I) exploration, (II) change, and (III) relapse prevention. In the first two phases, sessions should be scheduled weekly, whereas in the last phase, the frequency of sessions hould be decreased to give the client more autonomy and responsibility.The MBCT training consisted of 8 weekly sessions of 2.5 hours and a silent day according to the protocol described by Segal, Williams and Teasdale (Segal et al., 2002).

4. Findings

Table 1- mean and standard deviation of the pre-test, post-test and follow-up NAT scale

Groups	Pre-test		Post-test		Folloe-up	
	Mean	SD	Mean	SD	Mean	SD
MBCT	117.08	6.04	85.50	5.93	91.17	7.43
Schema therapy	121.42	5.78	83.67	6.34	94.33	7.27
control	119.50	6.83	119.50	5.23	118.25	7.23

Comparison of moderated meanings of negative automatic thoughts suggests that in negative automatic thoughts, the mean scores of subjects in the MBCT and schema therapy groups decreased from pre-test to post-test and increased slightly from post-test to follow-up. Hypothesis: Schema therapy and MBCT impacts on negative automatic thoughts in depressed patients.

Table 2- Results of within-subjects effects

Sum square	Df	Mean	F	Sig	Eta
9878.74	2	4939.37	47.92	0.005	0.74s

As shown in Table 2, there is a significant difference between mean scores of negative automatic thoughts in terms of membership in schema therapy, MBCT or control group ($P<0.01$) in the pre-test, post-test and follow-up there. P obtained ($p<0.01$) indicates that negative automatic thoughts between

the interventions and control groups in the level 0.01 has a significant difference. A post hoc test has been used to determine which groups are different and to determine whether therapeutic methods have changed the incidence of negative self-reported thoughts. The post hoc (LSD) results are presented below.

Table 3- Results of Post hoc test (LSD)

Groups		Mean differences	Std.error	sig	%95 confidence interval for difference	
					Lower bound	Upper bound
MBCT	Control	-21.17	2.39	0.005	-16.30	-26.05
MBCT	schema	-1.89	2.39	0.43	2.98	6.76
Schema	Control	-24.36	2.59	0.003	-15.30	-26.96

As shown in Table 3, mean scores of subjects in cognitive therapy and MBCT groups in negative thoughts are lower than the control group and the difference between trials and control groups are significant but difference between schema therapy and MBCT groups is not significant. The results of LSD test show that the schema therapy and MBCT can significantly reduce negative automatic thoughts in depressed women, but there is no difference between schema therapy and MBCT.

5. Discussion

The purpose of this study was to investigate the effect of MBCT and schema therapy on the use of negative automatic thoughts in depressed women. In an effort to examine the hypothesis of the effectiveness of schema therapy and MBCT on automatic thoughts we used repeated measure analysis of variance. The results showed a significant difference between experimental and control groups. Results indicated MBCT and schema therapy can significantly impact on negative automatic thoughts in depressed women ($p<0/01$).

A relatively large body of research demonstrates that individuals with a history of a major early adversity and persons with more lifetime episodes of depression develop MDD following lower levels of life stress compared to their less-vulnerable counterparts (Monroe & Harkness, 2005; Stroud, et al., 2008, 2011). Typically, the main objectives of the schema therapy are identifying early maladaptive schemas, validation inappropriate emotional needs, changing dysfunctional beliefs and maladaptive schemas for better performance, changing life patterns and maladaptive coping styles and providing an environment for learning coping skills. In recent years, Schema Therapy is used for Borderline Personality Disorder treatment but some experts believe that it can also be used for other conditions (Sperry, 2006).

In a study conducted by Mary Sue and colleagues (2011) schema therapy significantly reduced depression scores in patients during therapy. The results showed that depression scores during the 12 months after completion of therapy remained below the threshold level. Results of another study by Tabatabayibarzaki and colleagues (2011) with the aim of identifying maladaptive schemas and the role of education and implementation of experimental techniques in depressed individuals showed that defects, failures, dependence/incompetence, social isolation and emotional deprivation schemas are more severe in depressed patients compared to non- depressed. The results showed that the schemas of the experimental group who had received training in experimental techniques were improved compared to the control group. Beck depression model (1976) focuses on the role of childhood unpleasant events in creating depressive schemas. According to this model, other events in one's life in the future can motivate and activate depressive schemas formed in the past. Activation of such schemes leads to the launch of negative automatic thoughts and the thoughts in turn lead to depression. So according to Beck's Cognitive Model of Depression, dysfunctional beliefs are created by early experiences. Beck believes that critical events would activate these beliefs, which would then create

negative automatic thoughts about oneself. These cognitive thoughts then lead to symptoms of depression, which then reinforce more negative automatic thoughts. According to what was said schema therapy with targeting the underlying depressive schemas can lead to breaking the vicious circle of negative automatic thoughts and depression.

Therefore, it can be concluded that in this type of therapy the weakening of early maladaptive schema reduces the incidence of automatic thoughts, without our trying the change automatic thought directly. Thus it can be stated that in this type of therapy indirectly, without doing something with negative automatic thoughts and with the weakening of early maladaptive schemas reduced incidence of automatic thoughts. So According to the obtained results it can be stated that eliminating or reducing automatic thoughts in schema therapy is as a result of change or correct in schemas. The results of the study provide some evidence to suggest that schema therapy is an appropriate method for negative automatic thoughts reduction in depression. Schema therapy can help depressed women probably to change or modify their underlying thoughts and beliefs about themselves and this in itself can be changed or eliminated their automatic thoughts.

In explaining the effect of MBCT we can say, depressed women can use this technique to look at their thoughts and feelings without judgment, and to consider them as simple mental events that come and go, rather than consider as part of themselves or reflect on reality. This type of attitude to depression related cognitions prevents the aggravation of negative thoughts in the pattern of rumination.

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