

## **EFFECTIVENESS OF ACCEPTANCE AND COMMITMENT THERAPY (ACT) TO REDUCE THE SYMPTOMS OF DEPRESSION IN TYPE II DIABETIC PATIENTS**

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### **ABSTRACT**

The present study is an attempt to determine effectiveness of acceptance and commitment treatment (ACT) on attenuating symptoms of depression among type II diabetics. The work was carried out as quasi-experimental with pretest/posttest and control group through convenience method. The data was collected through clinical interview and 2<sup>nd</sup> version of Beck Depression Inventory (BDI-II). Among the type II diabetics referred to diabetes and metabolic disease clinic of Tehran Medical Science University (2013) 30 participants who showed depression symptoms were selected and categorized randomly in experiment (n=15) and control (n=15) groups. ACT was performed through 8 sessions (45-60min) for the experiment group and the control group received no intervention. Pre/posttest points were analyzed using ANCOVA test. The results indicated that there was a significant difference ( $p=0.000$ ;  $F = 137.48$ ) between the experiment and control groups regarding depression variable. Depression point of the experiment group comparing with the control group was significantly lower. This shows that ACT was effective on type II diabetics.

**Keywords:** *Acceptance and Commitment Therapy, Type II Diabetic, Depression*

### **INTRODUCTION**

Diabetes is a chronic disease where occur due to abnormalities in metabolism of starch, proteins and lipids, due to reduced insulin secretion or reduced sensitivity to insulin cells. Various studies estimate its prevalence has been estimated at 5% in the last 15 years and it's one of the risks to human health in the 21st century. So what now about 200 million people living with diabetes worldwide, and if the agent did not prevent the spread of the disease, to 2050, patient's statistics approximate will reach 333 million. Studies have shown that the prevalence of depression in people with diabetes is two times higher than others in the general population. Depression can create the problem for management of diabetes and inhibit a person's blood sugar. However, when diabetes was out of control, depression is worse, it's a cycle that sometimes they are placed in patients with diabetes. Treatments of depression in people with diabetes improve their quality of life and control of diabetes makes it easy. Epidemiologic data of different countries suggest the varied prevalence of depression in different societies. Studies report the prevalence of clinical depression in Iran more than other countries. In addition, the risk of depression is higher for women than in men (Kaviani, *et al.*, 2002). Data from epidemiologic studies reported depression disorder as the most prevalent psychological disorder (Segal, *et al.*, 2002). While, this disorder is often chronic and recursive and depression symptoms may recur 5-7 times during lifetime. The World Health Organization (WHO) predicts that depression will be the second most common disease worldwide by 2020. Twentieth century is called as the era of anxiety; on the other hand, prevalence of anxiety in Iranian society is the same as depression (Kaviani, *et al.*, 2002). Depression is highly associated with anxiety. Approximately 60 percent of those who are being treated for anxiety disorders meet diagnostic criteria for major depression (Browne *et al.*, 2002). Patients with anxiety and depression have more functional impairment; they often are in lower social status and have weaker respond.

Depression is a serious medical condition that affects thoughts, feelings and the ability to function in everyday life. Prince *et al.*, (1997b) demonstrated a significant relationship between a decrease in social support and the development of depression. McCurren *et al.*, (1993) found that lack of instrumental support was associated with depression, especially those with higher levels of functional disability and

### **Research Article**

therefore greater handicap (Prince *et al.*, 1997a). Oxman *et al.*, (1992) found a significant association between depression and tangible (instrumental) support. Oxman *et al.*, (1992) also found that adequate emotional support and a dense social network were clearly connected to reduction in depression, although this was restricted to contact with children rather than friends or other relatives. Chronic pain is a common reason for seeking medical care (Andersson *et al.*, 1999). In Finland, for example, 8.6% of visits to primary care physicians are due to chronic pain (Mäntyselkä *et al.*, 2001). According to Gureje *et al.*, chronic pain rates were between 5.5% and 33.0% among primary health care centre patients (Gureje *et al.*, 1998). However, more than 40% to 50% of patients in routine practice settings fail to achieve adequate relief. Chronic pain and unremitting pain are associated with depression, anxiety, loss of independence, and interference with work and relationships (Croft *et al.*, 1993). It is known that depression is the most common psychiatric comorbidity associated with chronic pain. Considering that depending on the severity of depression influences on all aspects of economic, social, and emotional individual, family and community, therefore, prevention of depression and inability to perform daily activities can enhance individual and community health (WHO, 1992). Generation of behavioural approaches in conflict with the basic approach of psychological analysis were introduced in the 1950s and 1960s based on classical conditioning perspective and an agent. Second generation therapies as the treatment of "cognitive - behavioural" By the 1990s, there were a greater emphasis on cognitive aspects, therapies emphasize the role of beliefs, knowledge, schemas and data processing system has been on psychological disorders in therapy with the different techniques on them, or they can be caused by a change or modification in general be deleted. Today, we are faced with the third generation of treatments that they can be called as a general model-based acceptance. In this treatment, trying to increase the associated between identify the thoughts and feelings with psychological (Hayes *et al.*, 2003). ACT is born of behaviour therapy. In fact, behavior therapy can be divided into three periods including traditional behavior therapy, cognitive behavioral therapy, and the third wave or contextual approaches to behavior (Hayes, 2005). As Hayes *et al.*, (2004) describe, ACT is a therapeutic approach uses acceptance, mindfulness, commitment, and behavior switch processes to create psychological flexibility. Unlike other views of Western psychotherapy, this method is not a syndrome-based approach. Rather, it is believed that healthy mind and cognition, thinking and language processes direct human toward avoiding experience (which, based on the third wave treatments, the existing conditions must be accepted). This empirical avoidance in turn leads to problems and sufferings for human (Hayes *et al.*, 1999). Acceptance and commitment therapy includes two parts: awareness and practice attention and experience at the present moment. Individuals are trained so as to live in the present moment and move and act toward their values in life by accepting their feelings and emotions and avoiding experimental avoidance (Smout, 2008). Based on ACT point of view, the basic source of psychopathology and human's dissatisfaction is the method of using rational thinking which affects how we live. This kind of mental flexibility appears when people use their language tool (e.g. when this tool is not useful or used in an ineffective or problematic way) (Looma *et al.*, 2007). This method highlights the ways the client tries to fight his inner life using language traps (Braikan, 2006). ACT intervention is aimed to change processes involved in the psychopathology of these disorders. In fact, this type of therapy is capable of changing tough thoughts and feelings in the individual and altering the way one deals with problems by means of particular techniques (Halford *et al.*, 1999). The core of change in ACT includes changing inner (self-thoughts) and outer (performances) verbal behaviors. In this method, it can be said that fighting emotions worsens them (Sawdera, 2007). Psychological inflexibility is the reasoning on the appearance of experimental avoidance, cognitive problems, being interested in conceptualization on oneself, disconnection from the present moment, and consequently failure in needs, behavior stages and the ownership of the main values. ACT intervention is aimed to change processes involved in the psychopathology of these disorders. In fact, this type of therapy is capable of changing tough thoughts and feelings in the individual and altering the way one deals with problems by means of particular techniques (Halford *et al.*, 1999). However, present study searching for an answer to the question of is effective acceptance and commitment therapy to reduce the symptoms of depression in type 2 diabetic patients?

## **Research Article**

### **MATERIALS AND METHODS**

#### **Method**

This study is applied research. In applied research, a quasi-experimental intervention plan is used and the results will be analyzed using statistical methods. Among the patients (male and female) with type 2 diabetic that referred (in 2013 year) to a specialist diabetic clinic, Medical of Tehran University, 30 diabetic patients with depressive symptoms were selected and randomly divided to experimental groups (n = 15) and controls (n = 15) groups. In this study, sampling with random assignment and control groups were used. Data were collected using questionnaires and performed in therapy center. The second version of the Beck Depression Inventory was administered to visitors who have depressive symptoms. Then 30 patients among them that obtained required scores in the test were selected and were randomly assigned to experimental and control groups. Of these tests were used as post-test. After pre-test, experimental group were acceptance and commitment therapy for 8 sessions, each session lasting 45-60 minutes. After the sessions, the post-test was carried out. The control group did not receive any intervention and only pre-test and post-test was done coincide with the experimental group.

#### **Instrument**

*The Beck Depression Inventory Second Edition (BDI-II)*: is a 21-item self-report instrument intended to assess the existence and severity of symptoms of depression as listed in the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders Fourth Edition (DSM-IV; 1994). Each of the 21 items corresponding to a symptom of depression is summed to give a single score for the BDI-II. There is a four-point scale for each item ranging from 0 to 3. On two items (16 and 18) there are seven options to indicate either an increase or decrease of appetite and sleep. Cut score guidelines for the BDI-II are given with the recommendation that thresholds be adjusted based on the characteristics of the sample, and the purpose for use of the BDI-II. Total score of 0-13 is considered minimal range, 14-19 is mild, 20-28 is moderate, and 29-63 is severe. With regard to construct validity, the convergent validity of the BDI-II was assessed by administration of the BDI-1A and the BDI-II to two sub-samples of outpatients (N=191). The order of presentation was counterbalanced and at least one other measure was administered between these two versions of the BDI, yielding a correlation of .93 ( $p < .001$ ) and means of 18.92 (SD = 11.32) and 21.888 (SD = 12.69) the mean BDI-II score being 2.96 points higher than the BDI-1A. A calibration study of the two scales was also conducted, and these results are available in the BDI-II manual.

#### **Data Analysis**

Data analysis was conducted with descriptive & inference statistics. In descriptive statistics analysis, means & standard deviation & in inference statistics part of the analysis ANCOVA test was used to analyze research hypotheses. All analysis was done by SPSS 16 software.

#### **Treatment Method (ACT)**

Training process has eight steps including:

- Session I: Introduction therapy, Discussion about confidentiality, Informed consent for the completion of the treatment process, Overall assessment, Understanding the concept of creative disappointment
- Session II: Performance Evaluation, Review prior meeting reflection on one's life, Check homework and continue to talk about the creative disappointment
- Session III and IV: Performance Evaluation, Review prior meeting reflection on one's life, Understanding the concept of willingness-admission, Behavioral commitment
- Session V and VI: Performance Evaluation, Review prior meeting reflection on one's life, Check homework and behavioral commitment, Understanding the concept of self-context as non-cognitive fusion, Theoretical knowledge of cognitive fusion, Training related to behavioral commitments and homework
- Session VII and VIII: Performance Evaluation, Review prior meeting reflection on one's life, Check homework, Understanding the concept of values, Increased focus on behavioral commitments.

## Research Article

### RESULTS AND DISCUSSION

43% (13 patients) of participants was male and 57% (17 patients) was female. Mean age of participants was 38.87 and 39.2 years in experimental and control groups, respectively (Table 1).

**Table 1: Age characteristics of participants**

N	Min	Max	Mean	SD
30	25	50	29.03	8.21

Descriptive indices related to depression scores for participants in control and experimental group are listed in Table 2. As seen in the table, mean depression score decreased for experimental groups in the post-test, but mean score in control group was increase in the post-test (Table 2). In pre-test, mean score in both groups is similar, but in post-test showed a great decrease for experimental group.

**Table 2: Descriptive analysis of depression score in pre-test and post-test in control and experimental groups**

Group	Stage	N	Min	Max	Mean	SD	Skewness	Skewness error	Kurtosis	Kurtosis error
Control	Pre-test	15	27	43	34.67	3.75	0.403	0.580	1.417	1.121
	Post-test	15	34	45	39.33	2.82	-0.172	0.580	0.452	1.121
Experimental	Pre-test	15	26	46	38.47	4.85	-1.32	0.580	2.387	1.121
	Post-test	15	19	30	23.87	3.50	-0.163	0.580	-1.021	1.121

After adjusting pre-test scores, significant effect not shown between subjects ( $p = 0.434$ ,  $F = 0.632$ ). Adjusted mean scores of depression suggest that, experimental group that used acceptance and commitment therapy compared with the control group have less depression significantly.

**Table 3: ANCOVA analysis of depression in in pre-test and post-test in control and experimental groups**

	SS	df	MS	F	Sig	Eta square
Pre-test	6.471	1	6.471	0.632	0.434	0.023
Groups	1408.38	1	1408.38	137.48	0.000	0.836
Error	276.59	27	10.244			
Total	32.34	30				

### Discussion

Our findings showed that mean depression score decreased for experimental groups in the post-test, but mean score in control group was increase in the post-test. In pre-test, mean score in both groups is similar, but in post-test showed a great decrease for experimental group. Cognitive-behavior therapy (CBT) as a broad approach to psychotherapy has become the most widely utilized and researched of all psychotherapeutic methods (Norcross *et al.*, 2002). Beck and his colleagues' cognitive therapy (CT) is, in turn, the most well-known and researched model among the larger family of CBT approaches (Beck, 2005). Focusing on change in distressing symptoms, CT embraces empiricism as its epistemological foundation. Systematic reviews have concluded that CT is effective for a wide range of disorders and problems (e.g., depression, anxiety syndromes, eating disorders, sexual dysfunctions), in a variety of patient populations (Beck, 1997; Hollon *et al.*, 2002; Nathan & Gorman, 2002; Roth & Fonagy, 2005). For example, Dobson (1989); Gaffan *et al.*, (1995); and Robinson *et al.*, (1990) conducted meta-analyses of the effectiveness of CT for depression, revealing that CT was superior to wait-list control conditions, as well as various active treatment comparisons. A recent review of 16 meta-analyses found broad support for the effectiveness of CT for a range of psychological conditions, including unipolar and bipolar depression, panic disorder, obsessive-compulsive disorder, social anxiety disorder, generalized anxiety

## Research Article

disorder, schizophrenia linked psychotic symptoms, and bulimia nervosa (Butler *et al.*, 2006). Relative to a variety of control conditions, including psychopharmacology, there is a substantial literature supporting the efficacy of CT (Beck, 1997). A variety of factors may limit the interpretation of results in any given outcome trial, including the type of comparison or control conditions used, the level of training and fidelity of study therapists, the appropriateness of measures, and allegiance to specific treatment approaches. Research to date has supported the effectiveness of ACT for the treatment of workplace stress (Bond & Bunce, 2003), psychosis (Bach & Hayes, 2002; Gaudiano & Herbert, 2006), depression (Zettle & Hayes, 1986; Zettle & Rains, 1989), test anxiety (Zettle, 2003), trichotillomania (Woods *et al.*, 2006), epilepsy (Lundgren, 2004), obsessive-compulsive disorder (Twohig *et al.*, 2006), and social anxiety disorder (Dalrymple & Herbert, 2007). In two studies of depression, changes in cognitive defusion mediated treatment effects for ACT, but not for CT (Zettle & Hayes, 1986; Zettle & Rains, 1989). Similarly, evidence for the mediating role of cognitive defusion was found in a pair of studies of ACT for psychosis (Bach & Hayes, 2002; Gaudiano & Herbert, 2006). Finally, another core ACT process is values clarification, which has received very little research attention to date. In explaining these results, it can be concluded that although there may be interference from other methods of psychotherapy and drug therapy or even may be positive effect on reducing physical discomfort the signs and symptoms, however, acceptance and commitment therapy also has been able to show exactly this effect. Additional research using designs that permit a formal evaluation of causal mediational mechanisms is especially needed.

## ACKNOWLEDGMENT

The authors would like to acknowledge the Department of Clinical psychology, Islamic Azad University, Roudehen Branch, for their support and contribution to this study.

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## **Research Article**

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