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Research Paper

Effectiveness of the Acceptance and Commitment Therapy on Experiential Avoidance of Veterans with Post-Traumatic Stress Disorder

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Post-traumatic Stress Disorder, Acceptance and Commitment Therapy, Experiential Avoidance, Veterans.

Abstract

Objective: In the theory of acceptance and commitment and recent theories, experiential avoidance is considered as an important factor in the etiology and continuation of mental pathology. This study was carried out to determine the efficacy and continuation of Acceptance and Commitment Therapy on reducing experiential avoidance of veterans with post-traumatic stress disorder.

Research Methodology: In this clinical trial, 16 veterans with post-traumatic stress disorder referred to Foundation of Martyrs and Veterans Affairs, with psychiatric diagnosis, were selected by purposive sampling method. They were treated for 8 sessions (each session 90 minutes) based on acceptance and commitment. Treatment was followed for two months after treatment. To collect the data, the check-list of symptoms of mental disorder (SCL-90), Clinician Administered PTSD Scale (CAPS-5), post-traumatic stress disorder list (PCL-5) and a questionnaire of acceptance and commitment (AAQ-II) were used.

Findings: Acceptance and Commitment Therapy significantly reduced the experiential avoidance and symptoms of post-traumatic stress disorder, and the reduction lasted up to two months after treatment.

Conclusion: The treatment process and the results obtained in this study suggest that the Acceptance and Commitment Therapy, in the treatment of post-traumatic stress disorder of veterans, had the necessary efficiency and effectiveness.

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Introduction

Post-traumatic stress disorder in the revised version of Diagnostic and Statistical Manual of Mental Disorders is placed in the diagnostic series of trauma and stress-related disorders which are characterized by four clusters of symptoms: 1. Interruptions, 2. Avoidance, 3. Negative changes in cognition and mood, 4. Outstanding changes in excitation and reactivity (American Psychiatric Association, 2013). Post-Traumatic Stress Disorder (PTSD) causes significant distress and disorder in social and personal functioning, and then, leads to social withdrawal, anger and aggressive behavior (Xue & et al., 2015). The prevalence of PTSD is higher in veterans and military population. Studies of recent conflicts suggest that combat-related PTSD afflicts between 4% and 17% of US Iraq War veterans and PTSD in US military veterans since the Vietnam War ranged from approximately 2% to 17% (Richardson, Frueh, & Acierno, 2010). Nemeroff (2006) in a study, shows that among the symptoms of post-traumatic stress disorder, avoidance symptoms are the most reliable indicators whose criteria can be fully met a person. The results of a study showed that experiential avoidance in people with post-traumatic stress disorder is higher than people without this disorder (Basharpoor, Shafiei, & Daneshvar, 2015). Studies have shown that veterans with PTSD have a higher rate of experiential avoidance than veterans who have recovered and veterans who do not have PTSD at all, which plays a pivotal role in the persistence of PTSD (Warnke, Nagy, Pickett, Jarrett, & Hunsanger, 2018). Experiential avoidance includes reluctance to experience the unpleasant inner experiences and deliberate efforts to control or escape (Nemeroff et al., 2006; Batten & Hayes, 2005). Experiential avoidance has a high correlation with many psychological disorders including post-traumatic stress disorder (Hayes, Levin, Plumb- Vilardaga, Villatte, & Pistorello, 2013). A reliance on experiential avoidance strategies appears to exacerbate or maintain PTSD symptoms over time (Tull, Gratz, Salters, & Roemer, 2004). Experiential avoidance is the phenomenon that occurs when a person is unwilling to remain in contact with particular private experiences (e.g., bodily sensations, emotions, thoughts, memories, behavioral predispositions) and takes steps to alter the form or frequency of these events and the contexts that occasion them (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996). Although experiential avoidance may initially result in reduced distress (and thereby be negatively reinforced), the chronic use of experiential avoidance is likely to have a paradoxical, negative effect, as attempts to avoid or alter internal experiences may actually increase the intensity and severity of the very emotions and thoughts being avoided (Haye, Strosahl, & Wilson, 1999; Gross, & Levenson, 1993).

The Acceptance and Commitment Therapy (ACT) is of the third-generation behavioral therapies, and is among a greater scope of cognitive-behavioral therapies, the contextual cognitive-behavioral therapies (Twohig, 2012). This method is an evidence-based psychological intervention that mixes strategies of acceptance and mindfulness with commitment and behavior change strategies in various ways (Hayes, 2004). From the perspective of Acceptance and commitment Therapy, psychological inflexibility and behavioral treasury limits are the core psychological problems, because veterans with post-traumatic stress disorders have lower psychological flexibility and their behavior is dominated by avoidance of stimuli associated with the war, and the goal of Acceptance and Commitment Therapy is to develop the psychological acceptance; this means that the person tends to drop avoidance and has unpleasant contact with the inner experiences, even if these experiences include fear, anxiety, unpleasant thoughts or memories associated with damage (Thompson, Luoma, & LeJeune, 2013).

In acceptance and commitment therapy, an attempt is made to change the goal of human beings from getting rid of unpleasant emotions to the full experience of these emotions. To do this, clients need to learn to experience both the emotions and the words they use to describe the nature and functions of those emotions in a completely different way. In this case, unpleasant emotions are no longer inherently harmful and do not necessarily determine the individual's subsequent behaviors (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996).

Recent studies on ACT have provided satisfactory results and rationales for using this therapy in clinical practice. In the area of post-traumatic stress disorder case studies (Thompson, Luoma, & LeJeune, 2013; Marx & Sloan, 2005; Woidneck, Morrison, & Twohig, 2014; Casselman & Pemberton, 2014; Twohig, 2009) have indicated the effectiveness of this therapy. The results of these studies showed a significant reduction in symptoms of PTSD, experiential avoidance, thoughts and beliefs related to damage and increase in the adoption of unpleasant inner experiences and mindfulness skills which continued in three- and six-month follow-up periods.

Acceptance and commitment therapy is appropriate for post-traumatic stress disorder because many studies show that people with the disorder have poor awareness of emotions, have used avoidance, and have inflexible emotional responses (Kelly, Reilly, & Ahern, 2020; Burrows, 2013; Marx & Sloan, 2005; Nexhmedin, Stangier, & Risch, 2008; Plumb, Orsillo, & Luterek, 2004).

Review of the literature and research background indicated that acceptance and commitment therapy significant reduction in experiential avoidance. According to the above the purpose of this study was to investigate the effect of acceptance and commitment therapy in reducing experiential avoidance in veterans with post-traumatic stress disorder.

Methodology

The present study was a quasi-experimental study with pretest, posttest and control group. The statistical population in this study includes all veterans of the Iraq-Iran war in the city of Kerman in 1394 who have post-traumatic stress disorder. Convenience sampling method was used; After announcing the call for participation in the treatment plan, 16 people who wanted to participate and were selected during a psychological interview based on DSM-5 and after the posttraumatic stress disorder was given by a psychiatrist. They were randomly assigned to experimental and control groups. After selecting the sample and before performing the intervention, a preliminary session was conducted. In this meeting, the purpose of the research and the necessary coordination on how to conduct the research were discussed. Then the questionnaires were completed. The participants of the experimental groups were then subjected to an acceptance and commitment therapy intervention program in After selecting the qualified sample, Acceptance and Commitment Therapy was conducted individually based on the practice pattern of Walser and Westrup (2007), for eight 90-minute sessions weekly. At the end of the intervention, all the subjects of the test and control groups completed the questionnaires again (post-test). The criteria for entering the treatment plan were to Diagnosis of post-traumatic stress disorder, obtaining a score above the cut line 38 in the PTSD Checklist for DSM-5 (PCL-5), receiving no other psychological treatments at the same time, the absence of disorder and psychotic features and having secondary school education at least. Post-traumatic stress disorder in these people was confirmed after an interview by a psychiatrist or clinical psychologist, based on the Clinician Administered PTSD Scale CAPS-5 (14) in order to have PTSD criteria (Weathers & et al., 2013). In conducting this research, the following issues were considered: 1- voluntary participation of individuals and having full satisfaction, 2- Giving sufficient information at the beginning of the research regarding the goals, method, duration and conditions of the research.

Instruments: in order to detect the absence of disorder and psychotic features in participants, SCL-90 test was used. This test is a list of 90-question self-reporting psychological symptoms created by Clinical Psychometric studies. The test consists of 90 items in 5-degree Likert scale (0 = none, 1 = slight, 2 = somewhat, 3 = high, 4 = extremely). This tool examines 9 dimensions of psychiatric symptoms: somatic complaints, Obsessive–Compulsive Disorders, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychosis. There are 7 additional items in this scale that are not classified in any of the aforementioned dimensions and are mentioned as others. Three general criteria are also included in this test, including disease symptoms (GSI), discomfort index (PSDI) and total disease symptom (PST) (Derogatis, 1977). To determine the prevalence of psychiatric symptoms in each dimension, the cut-off point of 2.5 is used, and the average scores of 2.5 and above 2.5 in each dimension are considered as a disease state. Many studies have confirmed the reliability and validity of the test (Anisi, Akbari, Majdian, Atashkar, & Ghorbani, 2011).

Clinician Administered PTSD Scale - CAPS-5: A structured interview has been prepared for diagnosis, severity, and PTSD symptoms by Weathers et al (2013) for the National Association of American PTSD; this scale is used for both military veterans and civilian survivors. Scores are derived from the total number of symptoms in each of the criteria. Given the novelty of this scale, psychometric properties of the previous version are offered. Internal solidarity for scale symptom cluster is 0.86-0.87 for the frequency (total frequency = 0.93 and Cronbach's alpha = 0.93), while it is 0.86-0.92 for severity (overall severity = 0.95 and Cronbach's alpha = 0.94) and 0.88-0.91 for precision (overall severity = 0.95 and Cronbach's alpha = 0.94) (Weather, Ruscio, & Keane, 1999). Internal reliability of 0.82-0.99 and kappa coefficient of 0.81 are calculated for post-traumatic stress disorder (Blanchard, Hickling, Taylor, Loos, 1995a). Reliability and validity of this scale have been confirmed in Iran (Firoozabadi, Asgharnejad Farid, Mirzaei, & Shareh, 2010).

Post-traumatic stress disorder list - PCL-5: It is self-reporting scale for assessing post-traumatic stress disorder and screening and separating these patients from normal individuals and other patients as a diagnostic assistance tool. This list is provided by Weathers et al. (2013) according to DSM-5 diagnostic criteria for the American National Center for Post-Traumatic Stress Disorder. The list contains 20 items: 5 items are related to signs and symptoms of re-experiencing the traumatic incident (Criterion B), 2 items are related to the avoidance of stimuli associated with the traumatic incident (Criterion C), 7 items are related to negative changes in cognition

and mood (Criterion D), and 6 items are related to excitation and reactivity (Criterion E). Total score is in the range of 0-80 obtained through the total scores of 20 items based on the Likert scale (0 = no, 1 = very little, 2 = moderate, 3 = high, very high = 4). Cut-off point has been set for the detection of score 38. This questionnaire has high reliability and validity. Internal consistency coefficients of 0.97 and 0.96 are reported for the total scale, while the coefficients of 0.93, 0.92, and 0.92 are reported for the symptoms of (D, B, C), and coefficient of 0.96 is reported as a retest factor in a two- or three-day interval (Blanchard, Jones-Alexander, Buckley, & Forneris, 1996b). Iran has confirmed psychometric properties of the questionnaire (Goodarzi, 2003).

Adoption and Act Questionnaire II - AAQ-II: The questionnaire contains 10 questions created by Bond et al. (2011); it evaluates the experiential avoidance and emotional inflexibility in the form of self-reporting. Subjects should answer the test questions in a five-choice Likert scale (1 = strongly agree to 5 = strongly disagree). This tool has good reliability, validity, and structural validity. Average alpha coefficient is 0.84 (0.87-0.88) and retest reliability for 3 and 12 months is 0.81 and 0.79, respectively (Bond et al., 2011). To analyze the data obtained from test and control groups, the descriptive statistics methods such as mean, standard deviation and tables were used. In the field of inferential statistics, Kolmogorov-Smirnov test, analysis of covariance and t-test were applied. Reviewing the descriptive findings of the variables and comparing the mean scores of the difference between test and control groups in the post-test step showed that, the test group is superior to the control in the dependent variable.

The intervention sessions are outlined in Table 1. Members of the control group received no intervention and were put in the waiting list. Acceptance and Commitment Therapy was conducted individually based on the practice pattern of Walser and Westrup (2007), for eight 90-minute sessions weekly for participants.

Table 1: Protocol of Acceptance and Commitment Therapy

Session	Session title	Description
1	Assessment and introduction of the program	Performing the pre-test, the content of the treatment program, explaining the six main treatment processes and introducing the concept of mindfulness
2	Creating creative helplessness	Performing the mindfulness exercise, focus on breathing, exploring and evaluating the individual's therapies and their effectiveness, discussing the temporary and ineffective solutions, programs for practicing mindfulness during the week
3	Control is the main issue	Reviewing exercises, practicing mindfulness of body checking, helping clients to identify inefficient control strategies and realizing the futility of them, accepting the painful personal events without conflict with them, receiving feedback and determining homework
4	Bringing up the desire	Reviewing exercises, creating mindfulness practice, desire for an alternative to control, exploring cognitive fusion and understanding barriers to desire, receiving feedback and determining assignments
5	Cognitive fusion	Reviewing exercises, practicing mindfulness of place imagination, raising the cognitive fusion and modifying the rules of language, receiving feedback and determining homework
6	itself as a context	Reviewing exercises, practicing mindfulness, realizing quality of mindfulness of mind, explaining the concepts of role and context, seeing oneself as the context and making self-contact, receiving feedback and determining assignments
7	Recognizing the values	Reviewing exercises, practicing the big total mindfulness, helping clients to identify their values, discovering the precious life, expanding values and goals, receiving feedback and determining assignments
8	Adherence to values	Reviewing exercises, practicing the mindfulness exercise of "we are all together", training the commitment to action, identifying behavioral patterns according to values and creating commitment to act, performing the post-test

Results

Table 2 indicates the descriptive data of the research sample. Descriptive statistics of the veterans regarding symptoms of the posttraumatic stress disorder and experiential avoidance are presented in Table.

Table 2: Mean and Standard Deviation of Symptoms of post-traumatic stress disorder and Experiential avoidance for Both Groups in Pretest and Posttest Stages

Group	Test	Mean	SD
Acceptance and commitment therapy (Symptoms of post-traumatic stress disorder)	Pre-test	51.37	6.78
	Post-test	4.37	4.56
	Follow-up	44.75	5.20
Control (Symptoms of post-traumatic stress disorder)	Pre-test	47.00	7.27
	Post-test	46.12	5.79
Acceptance and commitment therapy (Experiential avoidance)	Pre-test	22.62	1.50
	Post-test	15.00	2.82
	Follow-up	16.25	2.91
Control (Experiential avoidance)	Pre-test	18.00	2.56
	Post-test	17.62	1.84

As seen in Table 2, the mean (± SD) of the pre-test total score of veterans of test group was 51.37 (and 6.78) and 22.62 (and 1.50) in symptoms of post-traumatic stress disorder and experiential avoidance, respectively. Post-test total score of veterans of test group was 4.37 (and 4.56) and 15.00 (and 2.82) in symptoms of post-traumatic stress disorder and experiential avoidance, respectively; while, tracking score of veterans of test group was 44.75 (and 5.20) and 16.25 (2.91) in symptoms of post-traumatic stress disorder and experiential avoidance, respectively. In addition, the mean (± SD) of the pre-test total score of veterans of control group was 47.00 (and 7.27) and 18.00 (and 2.56) in symptoms of post-traumatic stress disorder and experiential avoidance, respectively. Post-test total score of veterans of control group was 46.12 (and 5.79) and 17.62 (and 1.84) in symptoms of post-traumatic stress disorder and experiential avoidance, respectively. In other words, scores of the test group have been reduced in symptoms of post-traumatic stress disorder and experiential avoidance. But in the control group, pre-test and post-test scores are not much different (Table 2).

As can be observed the normal distribution assumption for the pre-test scores on the scale of post-traumatic stress disorder is not normal (P <0.05). But in other scales it is normal in pre-test and post-test (P <0.05) in both experimental and control groups by Kolmogorov-Smirnov and Shapiro-Wilk Tests. Furthermore, the Levene test was used to test the equalization of variances, the results of which demonstrated that the assumption of equality of variances was confirmed for the research variables. Based on homogeneity of regression slope, the null hypothesis was rejected, and it was found that after the intervention, there were significant differences between the experimental and control groups in the symptoms of posttraumatic stress disorder and experiential avoidance.

Table 3: Covariance analysis of the variables

Analysis of covariance		Sum of squares	Degrees of freedom	Mean Square	F	Significance	Eta coefficient
Symptoms of post-traumatic stress	Experimental conditions	361.00	1	361.00	7.66	0.01	0.35
	Error	00659	14	47.07			
Experiential avoidance	Experimental conditions	162.56	1	162.56	20.07	0.01	0.58
	Error	113.37	14	8.09			

As Table 3 shows, in the results there is a significant difference of P < 0.05 between the experimental and control groups in all cases. it can be concluded that acceptance and commitment group therapy is effective in the reduction of experiential avoidance and post-traumatic stress disorder.

Table 4: Covariance analysis of the variables in the Group's Follow-up

variables	T	df	Sig
Symptoms of post-traumatic stress disorder	-2.02	7	0.08
Experiential avoidance	-0.171	7	0.49

As Table 4 shows, In the test group, mean difference of post-test and follow-up period was not significant for the experiential avoidance (P = 0.49) and post-traumatic stress disorder symptoms (P = 0.08). So, we can say that the effect of the training program was stable.

Discussion and Conclusion

The main objective of this study was to determine the effectiveness and continuation of impact of Acceptance and Commitment Therapy on reducing experiential avoidance in veterans with post-traumatic stress disorder.

Experiential avoidance and symptoms of post-traumatic stress disorder were the therapy's main goals. Comparing the scores of the participants in the pre-test and post-test indicates that Acceptance and Commitment Therapy has been successful in reducing experiential avoidance, and all veterans were recovered. Moreover, the symptoms of post-traumatic stress disorder, which had been diagnosed as byproduct above the cut-off point, finally came below the cut line of 38, and thus, improvement of patients is clinically significant. The results of the two-month follow-up scores of all patients also had a downward trend that was statistically significant.

The results of this study are consistent with the findings of Williams (2006) saying that experiential avoidance and PTSD symptoms had been dramatically decreased in veterans with PTSD after participating Acceptance and Commitment Therapy. Batten and Hayes (2005) showed that Acceptance and Commitment Therapy was effective in reducing the effort to reduce change and avoiding internal experiences. Study of Venjovic et al. (2009) in connection with the effectiveness of Acceptance and Commitment Therapy showed that involvement in an active process of internal events (thoughts, feelings, memories, and physical senses) reduce inefficient psychological states. In the study of Codd et al. (2011) Acceptance and Commitment Therapy is effective in reducing experiential avoidance anxiety disorders. These findings are all consistent with the present findings.

Based on the theoretical basis of Acceptance and Commitment Therapy i.e. the theory of communication framework, as the human grows, relationships are formed in his mind. These relations have three main characteristics: 1) they are two-way, 2) combined and 3) the functions of the related stimuli vary depending on the context (Hayes, Barnes-Holmes, & Roche, 2001). So, people with PTSD create a conditional network of fear after the damage according to their linguistic ability. This network is activated by trauma reminder stimuli; the information enters the individual's consciousness (re-experiencing symptoms) and individual efforts to suppress them lead to avoidance symptoms.

In the Acceptance and Commitment Therapy, experiential avoidance is one of the main processes of psychopathology. Experiential avoidance occurs when an individual does not want to continue to contact with a particular inner experience and to work to alter the shape, frequency, or sensitivity of the events even if this attempt leads to psychological harm. Furthermore, such situations may cause the person to move away from the environment. It should be emphasized that experiential avoidance is associated with negative consequences and the use of avoidance strategies such as denial, repression, and inhibition results in negative health consequences. (Hayes, Strosahl, & Wilson, 1999). Experiential avoidance prevents having a rich and meaningful life. The function of experiential avoidance is to control or minimize the impact of disturbing negative experiences. In general, avoiding experience is a harmful process associated with choice and stress in life (Eifert, & Forsyth, 2005). Blackledge (2004) suggests three reasons that experiential avoidance perpetuates the symptoms of post-traumatic stress disorder over time: It limits positive reinforcement opportunities; Nothing new happens, limits a person's behavioral treasures in dealing with situations, and leads to a combination of negative assessments of oneself and the environment, problematic behavioral rules, and recall of traumatic events (Thompson, & Waltz, 2010).

Post-traumatic stress disorder is a kind of disorder developed as a result of vain and ineffective attempts to control the thoughts, feelings and unwanted memories associated with the traumatic event(s), and avoidant behaviors have an important role in the development and persistence of the problems associated with damage (Orsillo, & Batten, 2005). So, ACT targets the experiential avoidance, and helps people to spread the answers to unwanted internal experiences (Hayes, Luoma, Bond, & Masuda, 2006), further people be open to and willing to have their inner experiences while focusing attention not on trying to escape or avoid pain but instead, on living

a meaningful life and in this way, six processes of ACT including acceptance, cognitive non-fusion, considering one-self contextual, sustained contact with the moments of life, clarifying values and effective action (Hayes, Strosahl, & Wilson, 1999). In each process, ACT challenges metaphors and paradoxical effect of experiential avoidance using the experiential exercises, and increases the openness to the current experiences, and alters the direction of individuals toward the values (Hayes et al., 1996).

Participating in this treatment program, One of the opportunities provided was that the subjects in the sessions could be aware of their efforts and struggles to change and avoid inner experiences (thoughts, feelings, memories and bodily sensations) and experience them without any judgment. These sessions provided an opportunity for them to learn to accept the internal and external experiences that are currently happening without resisting or avoiding them, and to be open to their life experiences.

For example, a person's attempt at the memories and thoughts and feelings associated with trauma actually shows that the person is not receptive to some of his life experiences and instead of being here and now, he is involved in judging experiences that he considers There are considered unpleasant. The process of contact with the moments of life helps them not to find the situation unbearable and to accept the experience of the real moments of their lives. Subjects could find in the form of exercises, metaphors, and explanations that what they took seriously was just a string of words and did not express reality.

The explanations given about the self-observer could remind them that their inner experiences are constantly changing, while the observer part of them is always constant. Taking this non-judgmental position allows them to observe their inner experiences. Encouraging people to clarify values and do effective work can help people take effective action toward their life values and take responsibility for their lives instead of avoiding them.

The findings of this study suggest that experiential avoidance plays a fundamental role in the development and persistence of post-traumatic stress disorder, and is an important factor in the etiology of this disorder. Moreover, Acceptance and Commitment Therapy has the necessary efficiency and effectiveness in reducing experiential avoidance and post-traumatic stress disorder symptoms.

This study has also some limitations as follows: 1. Lack of random selection of the sample group limits the generalization of results, 2. The follow-up of the effectiveness of the intervention in this study was done in a short period of time (2 months), 3. Due to the time limit, the sixth session of treatment based on acceptance and commitment was held in one session.

It is suggested that future research determine the effectiveness of acceptance and commitment-based treatment program in modulating other psychological and behavioral variables, this treatment should be compared with other common treatments that are common in the treatment of post-traumatic stress disorder.

Ethical Considerations

All ethical principles have been considered in this article.

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Conflict of Interest

The authors of this article declare that they have no conflict of interest.

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