

Effectiveness of Acceptance and Commitment Therapy on Perfectionism and Resilience in Migraine Patients

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Abstract

Aims: According to the World Health Organization, migraine is the twentieth rank among all disability-causing disorders. The present study aimed to evaluate the effectiveness of acceptance and commitment therapy (ACT) on perfectionism and resilience in migraine patients. **Materials and Methods:** The research method was semi-experimental with a pretest–posttest design and a control group. The statistical population of the study included all patients with migraine who presented to neurologists in Tehran in the fall of 2018, from which thirty patients were selected using convenience sampling method and randomly assigned to experimental and control groups. The data were collected by the Connor-Davidson Resilience Scale and Ahvaz Perfectionism Scale (APS). The experimental group received ACT in eight weekly sessions, while the control group was on the waiting list. The data were analyzed using the multivariate analysis of covariance. **Results:** Findings showed that there was a difference between the control and experimental groups in perfectionism and resilience means at the posttest level. Regarding the means of the variables after the intervention, results showed that those patients who received the intervention had more resilience and lower perfectionism than those who were in the waitlist control group. Therefore, the ACT was effective on perfectionism ($P < 0.001$) and resilience ($P < 0.001$) of migraine patients. **Conclusion:** Given the effectiveness of ACT, it is recommended to use the ACT as a supplementary therapy with medical treatments for migraine patients. Theoretical and practical implications are discussed in the discussion section.

Keywords: Acceptance and commitment therapy, migraine, perfectionism, resilience

INTRODUCTION

Migraine is one of the most common and disabling neurological diseases worldwide.^[1] This disease is an important type of headache; however, it is underrated, underdiagnosed, and undertreated in public health due to its intermittent attacks with long intervals between them.^[2] According to the World Health Organization, migraine is the twentieth rank among all disability-causing disorders.^[3]

In addition to the effect of physiologic variables, research evidence also has shown the effect of psychological factors on migraine incidence, persistence, and exacerbation.

These findings put migraine in the group of psychosomatic symptoms.^[4] Studies evaluating the relationship between perfectionism and psychosomatic symptoms have demonstrated that perfectionism is a risk factor for psychosomatic symptoms.^[5] There is also evidence that associates perfectionism to chronic diseases.^[6] Perfectionism is associated with various physical problems, including asthma, chronic pain, fatigue, headaches such as migraine,

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Received: 17-Oct-2020

Revised: 06-Jan-2021

Accepted: 16-Jan-2021

Published: 25-Sep-2021

Access this article online

Quick Response Code:



Website:
<http://iahs.kaums.ac.ir>

DOI:
10.4103/iahs.iahs_115_20

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How to cite this article: Esmaeili N, Asgari P, Khorami NS, Bakhtiarpour S. Effectiveness of acceptance and commitment therapy on perfectionism and resilience in migraine patients. *Int Arch Health Sci* 2021;8:138-42.

and chronic diseases.^[7,8] Moreover, there is also a relationship between perfectionism and general health.^[9] Flett and Hewitt proposed a model with specific components to prevent perfectionism and promote resilience and mental health in vulnerable children and adolescents.^[10]

While evaluating the clinical scales, it was shown that migraine patients are more vulnerable to life challenges. They may differ from normal people in some characteristics or need to upgrade some of their characteristics due to chronic illness and pain.^[11] In addition to pain alleviation, resilience is another important factor in the treatment of migraine patients. The American Psychological Association defines resilience as “a dynamic process that people with positive behavioral adaptation show while coping with difficulties, trauma, tragedy, threats, or even significant sources of mental stress.”^[12] In situations where the patient has to endure pain despite medical treatment, personal characteristics such as resilience are likely to improve well-being, optimize functional health, and maintain a good life.^[13] Many nonpharmaceutical treatments with promising results have been suggested for the treatment of patients with various types of migraines in recent years. Research findings also confirmed the efficacy of nonpharmaceutical interventions in improving diabetes symptoms and complications.^[14-16] Given the unavoidable effects of chronic headaches on the psychological condition of the patients and the role of stress in symptom development and pain severity in migraine patients, psychological interventions in migraine treatment have received attention since the late 1970s.^[17,18]

Novel approaches in the treatment of chronic pains like migraine have yielded encouraging results in the efficacy of acceptance and commitment therapy (ACT). This method has the same long-term efficacy as medical prevention in chronic pain treatment.^[19] ACT belongs to the third wave of behavioral approaches. It is used in different pathological conditions and includes attention to focused mental processes. This intervention aims to achieve psychological flexibility by developing six different positive capacities of acceptance, cognitive defusion, changing the imagined self with the observing self, attention with the present moment (mindfulness), values clarification, and committed action. These capacities can improve the mental and physical conditions as well as pain-induced disability and can be applied in clinical conditions such as chronic pains like the migraine.^[17] In recent years, many studies have extensively used acceptance and commitment therapy interventions with specific protocols to treat perfectionism.^[20] A study by Behrad *et al.*^[21] showed that positive psychotherapy and ACT improve the pain dimensions in migraine patients with equal efficacy. Therefore, they can be recommended as a supplementary treatment for related medical facilities.

There has been a great deal of research on the effect of cognitive-behavioral therapies and ACT, to a lesser extent, on migraine, but no research is available on the effect of ACT on resilience and perfectionism, especially in migraine

patients. However, the effect of ACT on other diseases such as multiple sclerosis has been investigated. Therefore, the present study was conducted to evaluate the effectiveness of ACT on perfectionism and resilience in migraine patients.

MATERIALS AND METHODS

The present study is a semi-experimental study with a pretest–posttest design and a control group. The study population included all migraine patients who presented to neurologists in Tehran in autumn 2018. Eight neurologists working in Tehran were selected using the convenient sampling method. Thirty-five participants were selected from their patients and randomly divided into two groups of the experimental and control groups. Inclusion criteria were ability to give informed consent, age 18–65 ages, general health, and ability to join the intervention. Exclusion criteria were no having consent to join the research and absence more than two times in intervention sessions. Following the dropout of several subjects, data from thirty subjects were analyzed. Data collection was performed using the following tools:

Ahvaz Perfectionism Scale

This scale is a self-reporting 27-item scale developed by Najarian, Attari, and Zargar (2000) using a sample of 395 students of the Islamic Azad University of Ahvaz and Shahid Chamran University by doing a factorial analysis. The convergent validity of the questionnaire was estimated using the Type A Behavior Pattern Scale (TA1) and the Symptom Checklist-90, while the divergent validity was calculated using the Coopersmith’s Self-Esteem Scale. The results showed a significant correlation between APS and the mentioned scales. In addition, Cronbach’s alpha was used to assess the internal consistency. The Cronbach’s alpha was 0.90 for the total participants and 0.89 for male subjects. The reliability of the scale in this research was 0.78 calculated by Cronbach’s alpha coefficient.

Connor-Davidson Resilience Scale

This scale is a 25-item questionnaire by Connor and Davidson (2003) to measure the ability to cope with stress. Internal consistency, test–retest reliability, convergent validity, and divergent validity were reported to be sufficient (Connor and Davidson, 2003). The scale reliability has been reported to be 0.80–0.89 in Iran using Cronbach’s alpha. Furthermore, the scale validity was calculated to be 0.41–0.64 by calculating each item’s correlation with the total score of the coefficients.^[22] The reliability of the scale in this research was 0.84 obtained through Cronbach’s alpha coefficient.

Procedure

An ACT protocol was designed for the present study in 8 personal weekly sessions with 60-min duration according to the treatment protocol by Vowles and Sorrell (2007) as follows:

- Session 1: Providing the opportunity for patients to become familiar with each other, the therapist, treatment overview, and therapeutic sessions. Determining the patients’ desire for treatment, investigating the past

pharmaceutical and nonpharmaceutical treatments, and finally, performing a diagnostic interview

- Session 2: Introducing the therapeutic concepts of acceptance and commitment. Discovering, reviewing, and scoring the therapeutic measures for the patient. Creating a feeling of helplessness on the temporariness and ineffectiveness of treatments using examples. Producing insights into the problem and challenging the problem. Receiving feedback and giving the assignments
- Session 3: Reviewing the assignments and experiences of the previous session, expressing control methods as a problem, assessing functioning, identifying the ineffective control strategies and realizing their futility, acceptance of the painful personal events without struggling with them, receiving feedback, and reviewing the homework for the next week
- Session 4: Creating acceptance and mindfulness by giving up and trying to control and create cognitive faults, discovering avoided situations and coping with them through acceptance, appropriate coping with mental experiences, teaching the acceptance steps by explaining the concepts of desire and barriers, and giving assignments for the next session
- Session 5: Reviewing the assignments and behavioral commitment of the observer, teaching the value-oriented life, expressing the concept of evaluation and description using allegory, teaching relaxation, and showing the separation between self, inner experiences, and behavior. Observing self as context, weakening the conceptual self and self-expression, creating goals and social lifestyles and practical commitment to them, and giving new assignments
- Session 6: Evaluating goals and actions, specifying values, goals, and actions and their barriers, explaining the concepts of role and context, observing self as a context and establishing contact with self with allegory, awareness of different sensory perceptions and separation from senses that are part of the mental content, focusing on activities and awareness of own condition. Therefore, the learner is trained to pay attention to their thoughts and feelings but not stick to their content. Receiving the feedback and giving assignments
- Session 7: Re-evaluation of values, goals, and actions. Making patients familiar and involved with desire and commitment, discovering practical values of life, and explaining the concept of values and expressing differences between values, goals, and motivations. Unclearness of the patient's values for a better life, concentration practice, receiving feedback, and giving assignments
- Session 8: Teaching committed action, identifying behavioral patterns consistent with values and creating a commitment to act on them, understanding the nature of desire and commitment, identifying action patterns consistent with values, reviewing assignments, and conducting posttests.

RESULTS

Given the distribution of subjects in terms of education level and age, we achieved the following results: twenty participants had a university degree while ten did not have a university degree. The mean age of the participants was 36.24 ± 5.12 . The mean and standard deviation of the scores of dependent variables in the experimental group, the control group, pretest assessment, and posttest assessment are presented in the table at the bottom of the page.

Table 1 presents the mean and standard deviation of the variables perfectionism and resilience in the experimental and control groups and pretest and posttest assessments. Multivariate analysis of covariance was used to investigate the significance of the differences. The assumptions of variance homogeneity, regression alignment, regression homogeneity, and data distribution normality were tested before the test. All the assumptions were present.

Table 2 given the results of multivariate analysis of covariance and Wilks' LAMBDA index (F and p), it was concluded that there is a significant difference between at least one of the dependent variables in the experimental and control groups. The results of ANCOVA analysis in MANCOVA are presented in Table 3 for a detailed investigation of the data.

As shown in Table 3, there is a significant difference between the two groups in the variables of resilience ($P < 0.001$) and perfectionism ($P < 0.001$). According to the table of means, it can be concluded that the ACT has been effective in improving the resilience and perfectionism of the participants in the experimental group.

Table 1: The mean and standard deviation of variables

Variable	Group			
	ACT		Control	
	Pretest	Posttest	Pretest	Posttest
Perfectionism	69.66±6.38	60.93±6.22	68.20±6.06	66.80±7.78
Resilience	38.73±3.84	44.13±3.52	38.26±4.49	38.86±4.29

ACT: Acceptance and commitment therapy

Table 2: Multivariate analysis covariance test

Statistical index test	Value	F	Hypothesis df	Error df	P
Pillai's trace	0.71	30.93	2	25	<0.001
Wilks' lambda	0.28	30.93	2	25	<0.001
Hotelling's trace	2.47	30.93	2	25	<0.001
Roy's largest root	2.47	30.93	2	25	<0.001

Table 3: Results of ANCOVA analysis in MANCOVA

Variable	Sum of squares	df	Mean square	F	P
Perfectionism	380.44	1	380.44	20.64	<0.001
Resilience	277.10	1	277.10	36.04	<0.001

DISCUSSION

The present study showed the effectiveness of ACT on perfectionism and resilience in migraine patients. According to the results, it was shown that ACT was effective in decreasing perfectionism and increasing resilience in migraine patients. The findings of our study were compatible with those of the previous studies.^[23-28] Many studies have also confirmed the relationship between mindfulness and factors of resilience and perfectionism.^[29,30] We can explain these findings by stating that resilience skills are learnable and psychological interventions like ACT can change susceptibility to resilience by reducing negative emotions and improving positive emotions. In fact, resilience improves by identifying the problems and stressors, creative brainstorming, joint decisions, negotiation, compromise, mutual communications, conflict management and resolution, focusing on achievable goals, learning from failures, preventing problems, and avoiding crises. People with high resilience are less likely to engage in behaviors that damage their self-esteem. They are emotionally relaxed and have the ability to change stressful situations.^[30]

We can explain the effectiveness of this intervention on patients' resilience by the fact that in patients with chronic pains such as migraine, pain avoidance prevents the direct experience of pain (experiential avoidance) and ultimately leads to malfunctioning by creating unresilient and ineffective behaviors. However, the resilient individual continues to maintain satisfactory function despite the pain and negative emotions. Therefore, pain avoidance and ineffective behaviors are neutralized by increasing psychological flexibility through the ACT, so the individual's function will not be impaired. In fact, the individual's resilience to pain increases. Another finding of the present study was the effectiveness of treatment on migraine patients' perfectionism, which was compatible with the previous studies.^[29,31,32] In explaining this finding, it can be stated that the main goal of the ACT is psychological flexibility. Thus, the processes of acceptance, mindfulness, commitment, and behavior change are used in the ACT to achieve psychological flexibility. This therapeutic approach helps the patients increase their contact with the present time and accept the pain-related thoughts, feelings, and physical sensations instead of trying to control or avoid them. In other words, they learn to give up any unnecessary effort to change the shape or frequency of unwanted inner experiences such as thoughts, memories, emotions, and physical sensations, thereby reducing high levels of anxiety and psychological malfunctioning. Furthermore, ACT helps individuals learn the interrelation with thoughts, feelings, and physical sensations in the present time using flexible ways without creating new rigid rules by techniques such as cognitive fault.^[17]

Finally, therapists help the patients identify their values and practice the behaviors serving these values. In other words, they commit to act in ways that are consistent with their selected values. This protocol was significantly effective in pain acceptance and self-efficacy in pain management

by targeting key cognitive mechanisms. In fact, negative thoughts and emotions open the gate of pain and transmit more information on pain to the brain. Conversely, positive thoughts and emotions close the gate of pain and limit the transmission of pain.^[33]

CONCLUSION

Given the mentioned discussions, it can be concluded that ACT may have been effective in decreasing perfectionism and increasing resilience in migraine patients. Therefore, we suggest that the ACT can be used as a concomitant psychological strategy with medical therapies in hospitals and medical facilities. The present study's limitations included lack of random selection, use of self-reporting questionnaires, and lack of follow-up period due to time and cost limitations.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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