

Research Paper: Effectiveness of Acceptance and Commitment Therapy on Psychosomatic Symptoms and Mindfulness in Patients With Psychosomatic Disorders



Samira Sayyar¹, Mohammad Reza Ghanbari², Abdollah Omid³, Carl Eduard Scheidt⁴, Reza Giveki^{5*}, Rasool Mohammadian¹

1. Department of Psychology, School of Medicine, Shahid Beheshti University of Medical Sciences, Tehran, Iran.

2. Department of Law, Faculty of Humanities and Law, Isfahan Branch, Islamic Azad University, Isfahan, Iran.

3. Department of Clinical Psychology, Faculty of Medicine, Kashan University of Medical Sciences, Kashan, Iran.

4. Department of Psychosomatic, Albert Ludwigs University, Freiburg, Germany.

5. Psychosomatic Research Center, Isfahan University of Medical Sciences, Isfahan, Iran.



Citation: Sayyar, S., Ghanbari, M. R., Omid, A., Scheidt, C. S., Giveki, R., & Mohammadian, R. (2019). Effectiveness of Acceptance and Commitment Therapy on Psychosomatic Symptoms and Mindfulness in Patients With Psychosomatic Disorder. *Journal of Practice in Clinical Psychology*, 7(2), 79-86. <http://dx.doi.org/10.32598/jpcp.7.2.79>

doi: <http://dx.doi.org/10.32598/jpcp.7.2.79>



Article info:

Received: 23 Nov 2018

Accepted: 12 Feb 2019

Available Online: 01 Apr 2019

Keywords:

Acceptance and Commitment Therapy, Mindfulness, Psychosomatic medicine

ABSTRACT

Objective: The current research investigated the effectiveness of Acceptance and Commitment Therapy (ACT) on psychosomatic symptoms and mindfulness in patients with psychosomatic disorders.

Methods: A randomized clinical trial was conducted at Kashan University of Medical Sciences clinics in Kashan City, Iran, from December 1, 2017, to March 30, 2018. In total, 66 patients with psychosomatic disorders were selected by purposive sampling method. The selected patients were divided into three groups (each 22 samples which were selected randomly). The subjects had a medical record at Kashan Beheshti Hospital. The experimental group received ACT with medicinal treatment. The first control group received psychological interventions and the second control group received medicinal treatment without any psychological interventions. The results were obtained using the Freiburg Mindfulness Inventory (FMI)-short Form and Diagnostic Criteria for Psychosomatic Research in the Pre-test and Post-Test phases and the three-month follow-up.

Results: In the follow-up and Post-Test phases, mindfulness improved in the intervention group, compared to the active and neutral control groups ($P < 0.001$). Moreover, the active control group demonstrated more ability to mindfulness than the neutral control group ($P < 0.001$). Furthermore, the obtained results were similar for psychosomatic symptoms.

Conclusion: ACT can improve psychosomatic symptoms and mindfulness level in patients with psychosomatic disorders.

* Corresponding Author:

Reza Giveki, MD.

Address: Psychosomatic Research Center, Isfahan University of Medical Sciences, Isfahan, Iran.

Tel: + 98 (912) 4400827

E-mail: givaki-md@gmail.com

Highlights

- Acceptance and commitment therapy could improve mindfulness skills.
- Acceptance and commitment therapy could eliminate psychiatric symptoms.
- The effects of acceptance and commitment therapy will be stable if patients continue their practices.

Plain Language Summary

Along with advances in the diagnosis and treatment of psychiatric disorders, researchers have paid particular attention to a range of disorders, called somatic symptom disorders. Psychosomatic disorders are known as a risk factor for a particular disease as well as a worsening of other medical conditions. Acceptance and Commitment Therapy (ACT) provides an opportunity for a more positive attitude toward thoughts and emotions. Through a daily practice based on mindfulness, ACT provides a ground for creative hopelessness and personal control over thoughts and painful feelings. This research aimed to investigate the effectiveness of ACT on psychosomatic symptoms and mindfulness in patients with psychosomatic disorders. Results showed that ACT could improve psychosomatic symptoms and mindfulness level in patients with psychosomatic disorders.

1. Introduction

Along with widespread advances in the diagnosis and treatment of psychiatric disorders, special attention has been paid to Somatic Symptom Disorders (SSDs) (Sadock & Ruiz, 2014). These disorders include somatic symptoms disorder, illness anxiety disorder, factitious disorder, conversion disorder, and psychological conditions influencing physical diseases. The average prevalence of these disorders in the clinical population visiting medical centers varies from 6% to 15% (Sadock & Ruiz, 2014). Furthermore, up to 20% of the patients referring to medical centers report the high prevalence and the importance of such disorders (Fava, Cosci, & Sonino, 2017; Hüsing, Löwe, Piontek, & Shedden-Mora, 2018; Sadock & Ruiz, 2014). Besides high prevalence, psychosomatic disorders are risk factor for specific diseases and exacerbate other medical conditions (Fava et al., 2017).

Medicinal treatment is the main therapeutic approach to SSDs. Scientific research have focused on the medical interventions for the treatment of SSDs; however, the clinical experiences of therapists and the results of trials indicate barriers to this approach, like non-compliance with the drug. Moreover, mental issues are both risk factor and the cause of these disorders, imposing numerous obstacles to medical services in improving them (Fallon, 2004; Givchki et al., 2018; Lee et al., 2007; Sadock & Sadock, 2011).

Besides illnesses and psychosomatic symptoms, many SSD patients demonstrate high levels of empirical avoidance. These patients often describe their inner experiences (thoughts, emotions, bodily sensations, impulses, or memories) unbearable, and attempt to avoid or reduce the severity of these experiences (Grossman, 2008). Moreover, SSD patients report a significant lack of flexibility and other mindfulness-related variables (Edinborough, 2011; Fjorback et al., 2013). Psychological interventions are often applied in the treatment of SSDs. Thus, Cognitive Behavioral Therapy (CBT) as one of the widely-used approaches in the treatment of most psychiatric disorders is of special importance in treating psychosomatic symptoms (Matsuoka, Chiba, Sakano, Toyofuku, & Abiko, 2017; Silverstein, Brown, Roth, & Britton, 2011).

Although CBT has many benefits for psychosomatic patients, it has several limitations. First of all, CBT frequently challenges patients' irrational thoughts and beliefs. However, many psychiatric patients are unable to cope with such challenges. Because of the nature of the disease, people cannot cope with their inferior thoughts (Cayoun, 2014; Matsuoka et al., 2017). Furthermore, CBT does not address abnormalities and fails to have a clear diagnostic prognosis. These severe constraints are among the factors behind the low rate of recovery through this treatment (Baker et al., 2014; Cayoun, 2014; Yazdanimehr, Omid, Sadat, & Akbari, 2016).

An alternative option is Acceptance and Commitment Therapy (ACT). ACT, through education, improves pos-

itive attitude toward thoughts and emotions associated with flexibility; then, through daily mindfulness-based practice, promotes creative hopelessness toward personal control over thoughts and painful emotions, provide clients with feelings of frustration over their past practices to control patients' anxiety (Cayoun, 2014).

This condition facilitates acceptance as an alternative solution. With the adoption and reduction in the inner struggles, new scope and time are created for the patients to discuss their valuable and important lives. In fact, this shifts the focus of clients from their past unsuccessful solutions and concerns to problem-solving scope. This process reduces the concerns and breaks the loop of obsession. A significant reduction in concern also improves the person's performance and creates new habits and attitudes. In other words, ACT through the creation and development of admission and value-based lives in clients promotes the treatment process. ACT with an experiential nature (without challenging thoughts), is beneficial for many people (Eifert & Forsyth, 2005; Hayes, Luoma, Bond, Masuda, & Lillis, 2006). It is a treatment in which awareness and acceptance of the body are important and can affect mental health (Blackledge, Ciarrochi, & Deane, 2009; Davoudi, Omid, Sehat, & Sepehrmanesh, 2017). However, to our knowledge, no study has investigated these issues. Thus, the present study examined the effectiveness of ACT on psychosomatic symptoms and mindfulness in patients with psychiatric disorders.

2. Methods

This was a single-blind clinical trial study with Pre-test-Post-Test design and a three-month follow-up period with two control groups. The study population included

all patients diagnosed with psychosomatic disorders by a psychiatrist, an internal medicine specialist, or a clinical psychologist at the treatment center in Kashan City, Iran, from December 1, 2017, to March 30, 2018.

The inclusion criteria were as follows: aged 18-60 years; diagnosed with a psychosomatic disorder based on Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM-5); not hospitalized for a schizophrenia spectrum or other psychosis disorders; no comorbid psychiatric disorder; and no history of substance abuse. The exclusion criteria were substance abuse during the interventions and follow-up, more than two sessions absence, and unwillingness to continue the treatment.

Based on the previous research (Vowles, Fink, & Cohen, 2014), the sample size calculated for each group was about 20 at the confidence interval of 95%, with a type II error of 20%. However, considering the potential sample dropout and other possible confounding factors, this number was increased by 10% to have 22 in each group (n=66). After selecting the patients, each person was assigned a code and based on permuted block randomization by a computerized random number generator, the study participants randomized into three groups (number of each: 22). Then, the intervention group received ACT with medicinal treatment. The first control group received psychological interventions and the second control group received medicinal treatment without any psychological interventions. The study tools included the demographic data questionnaire, used for assessing the variables such as age, gender, mental disorders, educational level, and occupational status (Figure 1).

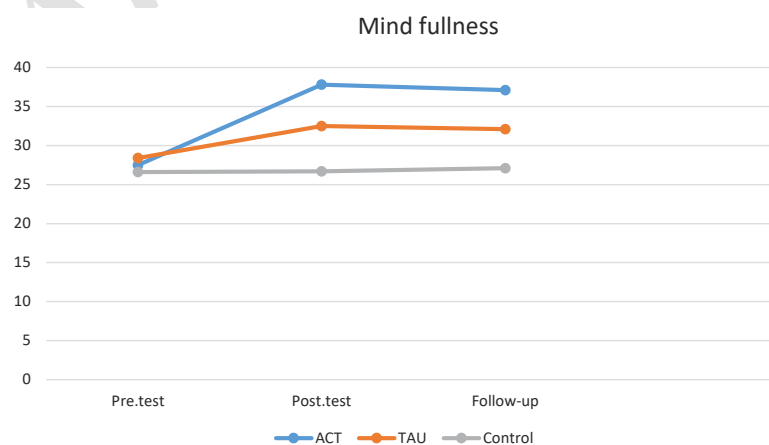


Figure 1. The trend of mean mindfulness score changes at three measuring times in the three groups

Table 1. A summary of the contents of ACT sessions

Sessions	Description of the Session
1	Developing a rapport, explaining the intervention, performing the "raisin eating" exercise, and breathing exercise
2-5	Teaching and exercising mindfulness, reviewing the previous session homework, identifying the thoughts and emotions and the relationships between them, teaching the memorization of pleasant life events, focusing on the breathing exercise, extending mindfulness, developing creativity from hopelessness, building the table of the consequences of the Schema Coping Behaviors (SCBs), and teaching the defusion techniques
6-8	Teaching defusion with an emphasis on valuation versus description, examining willingness versus inevitable pain and absence from relationships, examining self-evaluation versus discussion, the reinforcement of self as context versus self as content using the 'chess metaphor' and the visualization of the worst condition, assessing the costs of avoiding painful emotions through experiential exercises, practicing 'the tug of war' exercise, and 'the self as observer' exercise, and homework assignment
9	Reviewing the previous session's homework, mental visualization; exercising defusion and alternative responses, visualizing mindfulness and developing compassion for pain resulting from the body image, and homework assignment
10	Creating mindfulness, improving self-compassion and compassion for others, reviewing the homework, holding group discussions over the previous sessions' exercises, role-playing and offering alternative responses to events caused by body image, discussing the barriers, developing strategies for valuable actions, and invoking commitment to valuable actions, and performing post-treatment evaluations

PRACTICE in
CLINICAL PSYCHOLOGY

Freiburg Mindfulness Inventory (FMI)-Short Form has been used to examine psychometric properties in many cultures (Ghasemi Jobaneh, Arab Zadeh, Jalili Nikoo, Mohammad Alipoor, & Mohsenzadeh, 2015). This is a psychometric tool for evaluating mindfulness in clinical and non-clinical populations. Moreover, many researchers consider it as an exact and proper tool for measuring mindfulness-related factors. Studies indicate that the total score of FMI short form is valid for practical and functional purposes; e.g. its internal consistency was 0.827. FMI with the Cronbach alpha coefficient of 0.92 on the Iranian population has an acceptable validity (Ghasemi Jobaneh, et al. 2015).

The Diagnostic Criteria for Psychosomatic Research (DCPR) represent a diagnostic and conceptual framework that aims to translate psychosocial variables derived from psychosomatic research into operational tools whereby individual patients can be identified. A set of 12 syndromes was developed, including disease phobia, health anxiety, illness denial, persistent somatization, functional somatic symptoms secondary to a psychiatric disorder, conversion symptoms, anniversary reaction, irritable mood, type A behavior, demoralization, and alexithymia (Ebrahimi et al., 2018; Sirri & Fava, 2013).

The treatment plan was designed using the proposed theoretical model of ACT for body image dissatisfaction and improvement in mindfulness skills, developed by Pearson et al. (Follette, Heffner, & Pearson, 2010). Table 1 describes the treatment protocol with the sessions' details. The obtained data were analyzed in SPSS. Prior to

conducting the research, a brief session was held for the patients. In that session, ethical considerations and research project were explained to the patients. Afterward, the written informed consent was obtained from all the study participants. Furthermore, the study participants were assured about the confidentiality of their personal records and that their medical information would be disclosed to the medical team. This research was approved by the Ethics Committee of Kashan University of Medical Sciences (IR.KAUMS.MEDNT.REC; code of ethics: 1396.6).

3. Results

Of the 66 study participants, two from the experimental group were unwilling to continue participation in the study. Finally, data analysis was performed on 64 samples (20 in the experimental group and 22 in the active control group and 22 in the conventional treatment group). The samples' demographic data are listed in Table 2. The mean age of the study participants in the experimental and control groups was determined. There was no significant difference between the two groups in terms of age ($P>0.05$). Additionally, there was no significant difference between the two groups in the type of diagnosis, gender, marital status, and educational level ($P>0.05$).

The FMI results in all three groups were evaluated by repeated measures Analysis of Variance (ANOVA). As per Table 3, before the intervention, there was no significant difference between the three groups in the level

Table 2. Comparing the demographic characteristics of the three studied groups

Variables		Intervention	Active Control	Passive Control	P
Age, y (Mean±SD)		38.4±6.17	38.0±5.7	37.09±5.88	0.763
Gender No (%)	Male	10(50)	10(45.5)	12(54.5)	0.83
	Female	10(50)	12(54.5)	10(45.5)	
Educational level No (%)	Guidance school	8(40)	10(46.4)	9(40.5)	0.90
	High school	9(45)	9(40.5)	10(46.6)	
	Academic	3(15)	3(13.6)	3(13.6)	
Diagnosis No (%)	Illness anxiety	5(25)	6(27.2)	5(22.7)	0.91
	Somatic symptom disorder	6(30)	4(18.18)	5(22.7)	
	Psychological factors influencing physical diseases	9(45)	12(54.62)	12(54.62)	

of mindfulness ($P < 0.05$). However, in the post-test and follow-up phases, the experimental group had significant improvements, compared to the control and conventional treatment groups ($P < 0.05$).

The mean values of the study variables of the groups are not equal according to the mean of the Least Significant Difference (LSD). According to Table 4, the mean score of consciousness is different in the three groups. Therefore, the mean consciousness awareness is represented in the intervention and acceptance intervention groups, followed by the general treatment group TAU, and the active control group.

4. Discussion

The obtained results revealed that ACT could improve mental health and mindfulness. Despite the existence of few studies in this area, the results of earlier investigations were consistent with the present study findings. For example, Hoffman investigated the effectiveness of ACT through website on people with severe anxiety disorder. Fifteen people were treated with adherence and commitment in online video sessions. The achieved results indicated that ACT could be effective in the treatment of anxiety in these people (Hoffmann, Rask, Hedman-Lagerlöf, Ljótsson, & Frostholm, 2018).

Furthermore, patients with anxiety problems were investigated in terms of the efficacy of group ACT. The

Table 3. Comparison of effects between the 3 groups in the consciousness variable

Variable	Pre-test			Post-test			Follow-up			Value
	Intervention	TAU	Control	Intervention	TAU	Control	Intervention	TAU	Control	
Mindfulness	27.7(4.5)	28.4(6.1)	26.6(5.6)	26.7(7.19)	32.5(7.2)	37.8(7.4)	26.6(5.6)	32.09(6.6)	27.1(7.8)	F=24.6 P=0.001

Table 4. Least significant difference

Variable	Mean Differences	P
Mindfulness	Active control	0.001
	TAU	0.03
	Active control	0.001

collected results indicated the effectiveness of ACT in the reduction of anxiety in these patients (Eilenberg, Hoffmann, Jensen, & Frostholm, 2017). Sebastián Sánchez et al. (2017) evaluated the efficacy of ACT on irritable bowel syndrome. They reported that this treatment improved samples' psychosomatic symptoms. Another study evaluated the effectiveness of group ACT on the rehabilitation of female patients with chronic headache; the obtained results indicated improvements in samples' headaches and tension (Mo'tamedi, Rezaeiemaram, & Tavallaie, 2012). Moreover, McCarthy and Wolves explored the efficacy of ACT on chronic pain. They found that this treatment, by improving mindfulness in these people, would reduce the patients' response to chronic pain (McCracken & Vowles, 2014).

People with psychosomatic problems are drowned in their past- and future-related thoughts. ACT teaches them to focus on the present moment with the use of metaphors, including the metaphor of "body's touch", and reminds the clients that "life is here and now". This approach leads to experience a new relationship with ones' own body (Dahl, Luciano, & Wilson, 2005).

This experience leads to a better understanding of visceral and physical states in people; thus, reduces quick and sometimes unplanned responses in these people. In this treatment, the therapist tells the clients that you should behave in a way to enjoy being at the moment, like enjoy eating while eating (McCracken, 2011). Problems arise because people are drowned in the past or future; thus, lose contact with the current moment. Attention to here-and-now undermines avoidance and conflicts. ACT does not seek to change the content of thoughts but is a behavioral therapy that uses the skills of mindfulness, acceptance, and cognitive impairment to increase flexibility (Batten, 2011). Relationship with the present moment is a process through which people learn to focus on their present emotions and re-experience present. It consequently reduces their problems (Hayes et al., 2006; Hayes, Strosahl, & Wilson, 2012).

The current study had some limitations, as follows: the follow-up period was short. The study examined the general score of mindfulness and overlooked its subscales. It is suggested that future studies consider a longer follow-up period. Additionally, we can compare the components of mindfulness and ACT, that have contributed to the samples' improvement. The high costs of treatment and the need for a short-term version are very important matters.

The obtained data revealed the efficacy of ACT in psychosomatic symptoms among psychosomatic patients. Clinicians learn to aid the clients in a method of mindful self-study that helps patients become aware of body sensations and bodily experiences. Furthermore, this study highlighted that ACT interventions for mindfulness are promising, and investment in future research using larger sample sizes and higher quality randomized controlled trials is required to confirm the effectiveness of ACT in psychosomatic-related variables.

Ethical Considerations

Compliance with ethical guidelines

This research was approved by the Ethics Committee of Kashan University of Medical Sciences (code: IR.KAUMS.MEDNT.REC.1396.6). Prior to conducting the research, a brief session was held for the patients. Ethical considerations and research project were explained to the patients. Afterward, the written informed consent was obtained from all study participants. Furthermore, the study participants were assured about the confidentiality of their personal records and that their medical information would be disclosed to the medical team.

Funding

The Research and Technology Department of Rahnamed Sazan Sepahan funded this research.

Authors' contributions

All authors equally contributed to design and conduct the research and write the manuscript.

Conflict of interest

The authors declared no conflict of interest.

Acknowledgments

The authors hereby express their gratitude to the honorable people of Rahnemod Sazan Sepahan of Isfahan, who provided help in the course of this research. The authors are also thankful to the esteemed Research and Technology Department, Rahnamed Sazan Sepahan, for funding this research.

References

- Baker, A. L., Kavanagh, D. J., Kay-Lambkin, F. J., Hunt, S. A., Lewin, T. J., Carr, V. J., et al. (2014). Randomized controlled trial of MICBT for co-existing alcohol misuse and depression: Outcomes to 36-months. *Journal of Substance Abuse Treatment*, 46(3), 281-90. [DOI:10.1016/j.jsat.2013.10.001] [PMID]
- Batten, S. (2011). *Essentials of Acceptance and Commitment Therapy*. Thousand Oaks, California: Sage Publications.
- Blackledge, J. T., Ciarrochi, J., & Deane, F. P. (2009). *Acceptance and Commitment Therapy: Contemporary theory research and practice*. Samford Valley: Australian Academic Press.
- Cayoun, B. A. (2014). *Mindfulness-integrated CBT for well-being and personal growth: Four steps to enhance inner calm, self-confidence and relationships*. Hoboken, New Jersey: John Wiley & Sons. [DOI:10.1002/9781118509111]
- Dahl, J., Luciano, C., & Wilson, K. (2005). *Acceptance and Commitment Therapy for chronic pain*. Oakland, California: New Harbinger Publications.
- Davoudi, M., Omid, A., Sehat, M., & Sepehrmanesh, Z. (2017). The effects of Acceptance and Commitment Therapy on man smokers' comorbid depression and anxiety symptoms and smoking cessation: A randomized controlled trial. *Addiction & Health*, 9(3), 129. [PMCID] [PMID]
- Ebrahimi, A., Rief, W., Mirshahzadeh, P., Zanjani, H. A., Dehsorkhi, H. N., Roohafza, H., et al. (2018). Psychometric properties of the Persian version of screening for Somatic Symptom Disorders-7 (SOMS-7). *Iranian Journal of Psychiatry*, 13(4), 264-73.
- Edinburgh, C. (2011). Developing decision-making skills for performance through the practice of mindfulness in somatic training. *Theatre, Dance and Performance Training*, 2(1), 18-33. [DOI:10.1080/19443927.2010.543917]
- Eifert, G. H., & Forsyth, J. P. (2005). *Acceptance and Commitment Therapy for anxiety disorders: A practitioner's treatment guide to using mindfulness, acceptance, and values-based behavior change*. Oakland, California: New Harbinger Publications.
- Eilenberg, T., Hoffmann, D., Jensen, J. S., & Frosthalm, L. (2017). Intervening variables in group-based acceptance & commitment therapy for severe health anxiety. *Behaviour Research and Therapy*, 92, 24-31. [DOI:10.1016/j.brat.2017.01.009] [PMID]
- Fallon, B. A. (2004). Pharmacotherapy of somatoform disorders. *Journal of Psychosomatic Research*, 56(4), 455-60. [DOI:10.1016/S0022-3999(03)00631-7]
- Fava, G. A., Cosci, F., & Sonino, N. (2017). Current psychosomatic practice. *Psychotherapy and Psychosomatics*, 86(1), 13-30. [DOI:10.1159/00048856] [PMID]
- Fjorback, L. O., Arendt, M., Ørnbøl, E., Walach, H., Rehfeld, E., Schröder, A., et al. (2013). Mindfulness therapy for somatization disorder and functional somatic syndromes-Randomized trial with one-year follow-up. *Journal of Psychosomatic Research*, 74(1), 31-40. [DOI:10.1016/j.jpsychores.2012.09.010] [PMID]
- Follette, V., Heffner, M., & Pearson, A. (2010). *Acceptance and Commitment Therapy for body image dissatisfaction: A practitioner's guide to using mindfulness, acceptance, and values-based behavior change strategies*. Oakland, California: New Harbinger Publications.
- Ghasemi Jobaneh, R., Arab Zadeh, M., Jalili Nikoo, S., Mohammad Alipoor, Z., & Mohsenzadeh, F. (2015). [Survey the validity and reliability of the Persian version of short form of Freiburg Mindfulness Inventory (Persian)]. *Journal of Rafsanjan University of Medical Sciences*, 14(2), 137-50.
- Givehki, R., Afshar, H., Goli, F., Scheidt, C. E., Omid, A., & Davoudi, M. (2018). Effect of Acceptance and Commitment Therapy on body image flexibility and body awareness in patients with psychosomatic disorders: A randomized clinical trial. *Electronic Physician*, 10(7), 7008-16. [DOI:10.19082/7008] [PMID] [PMCID]
- Grossman, P. (2008). On measuring mindfulness in psychosomatic and psychological research. *Journal of Psychosomatic Research*, 64(4), 405-8. [DOI:10.1016/j.jpsychores.2008.02.001] [PMID]
- Ghasemi, J. R., Arab Zadeh, M., Jalili Nikoo, S., Mohammad Alipoor, Z., Mohsenzadeh, F. (2015). Survey the validity and reliability of the Persian version of short form of freiburg mindfulness inventory. *Journal of Rafsanjan University of Medical Sciences*, 14(2), 137-50.
- Hayes, S. C., Luoma, J. B., Bond, F. W., Masuda, A., & Lillis, J. (2006). Acceptance and Commitment Therapy: Model, processes and outcomes. *Behaviour Research and Therapy*, 44(1), 1-25. [DOI:10.1016/j.brat.2005.06.006] [PMID]
- Hayes, S. C., Strosahl, K. D., & Wilson, K. G. (2012). *Acceptance and Commitment Therapy: The process and practice of mindful change (2nd edition)*. New York: The Guilford Press.
- Hoffmann, D., Rask, C. U., Hedman-Lagerlöf, E., Ljótsson, B., & Frosthalm, L. (2018). Development and feasibility testing of internet-delivered Acceptance and Commitment Therapy for severe health anxiety: Pilot study. *JMIR Mental Health*, 5(2), E28. [DOI:10.2196/mental.9198] [PMID] [PMCID]
- Hüsing, P., Löwe, B., Piontek, K., & Shedden-Mora, M. (2018). Somatoform disorder in primary care: The influence of comorbidity with anxiety and depression on health care utilization. *Journal of Evaluation in Clinical Practice*, 24(4):892-900. [DOI:10.1111/jep.12898] [PMID]
- Lee, S. H., Ahn, S. C., Lee, Y. J., Choi, T. K., Yook, K. H., & Suh, S. Y. (2007). Effectiveness of a meditation-based stress management program as an adjunct to pharmacotherapy in patients with anxiety disorder. *Journal of Psychosomatic Research*, 62(2), 189-95. [DOI:10.1016/j.jpsychores.2006.09.009] [PMID]
- Matsuoka, H., Chiba, I., Sakano, Y., Toyofuku, A., & Abiko, Y. (2017). Cognitive behavioral therapy for psychosomatic problems in dental settings. *BioPsychoSocial Medicine*, 11(1), 18. [DOI:10.1186/s13030-017-0102-z] [PMID] [PMCID]
- McCracken, L. (2011). *Mindfulness and acceptance in behavioral medicine: Current theory and practice*. Oakland, California: New Harbinger Publications.
- McCracken, L. M., & Vowles, K. E. (2014). Acceptance and Commitment Therapy and mindfulness for chronic pain: Model, process, and progress. *American Psychologist*, 69(2), 178-87. [DOI:10.1037/a0035623] [PMID]
- Mo'tamedi, H., Rezaemaram, P., & Tavallaie, A. (2012). The effectiveness of a group-based acceptance and commitment additive therapy on rehabilitation of female outpatients with chronic headache: Preliminary findings reducing 3 dimensions of headache impact. *Headache: The Journal of Head and Face*

- Pain*, 52(7), 1106-19. [DOI:10.1111/j.1526-4610.2012.02192.x] [PMID]
- Sadock, B. J., & Sadock, V. A. (2011). *Kaplan and Sadock's synopsis of psychiatry: Behavioral sciences/clinical psychiatry*. Philadelphia: Lippincott Williams & Wilkins.
- Sadock, B. J., Ruiz, P. (2014) *Kaplan and Sadock's synopsis of psychiatry: Behavioral sciences/clinical psychiatry*. Philadelphia: Lippincott Williams & Wilkins
- Sebastián Sánchez, B., Gil Roales-Nieto, J., Ferreira, N. B., Gil Luciano, B., Domingo, S., & José, J. (2017). New psychological therapies for irritable bowel syndrome: Mindfulness, Acceptance and Commitment Therapy (ACT). *Revista Española de Enfermedades Digestivas*, 109(9), 648-57. [DOI:10.17235/reed.2017.4660/2016] [PMID]
- Silverstein, R. G., Brown, A. C. H., Roth, H. D., & Britton, W. B. (2011). Effects of mindfulness training on body awareness to sexual stimuli: Implications for female sexual dysfunction. *Psychosomatic Medicine*, 73(9), 817-25. [DOI:10.1097/PSY.0b013e318234e628] [PMID] [PMCID]
- Sirri, L., & Fava, G. A. (2013). Diagnostic criteria for psychosomatic research and somatic symptom disorders. *International Review of Psychiatry*, 25(1), 19-30. [DOI:10.3109/09540261.2012.726923] [PMID]
- Vowles, K. E., Fink, B. C., & Cohen, L. L. (2014). Acceptance and Commitment Therapy for chronic pain: A diary study of treatment process in relation to reliable change in disability. *Journal of Contextual Behavioral Science*, 3(2), 74-80. [DOI:10.1016/j.jcbs.2014.04.003] [PMID] [PMCID]
- Yazdanimehr, R., Omid, A., Sadat, Z., & Akbari, H. (2016). The effect of mindfulness-integrated cognitive behavior therapy on depression and anxiety among pregnant women: A randomized clinical trial. *Journal of Caring Sciences*, 5(3), 195-204. [DOI:10.15171/jcs.2016.021] [PMID] [PMCID]