Vol. 7, No.2, (2026), 39-57
© 2026, Summer
Published online September, 2026

Journal of Preventive Counselling (JPC)

The Effect of Acceptance and Commitment Therapy (ACT) on Obsessive-Compulsive Symptoms, Somatization, and Chronic Fatigue in Patients with Depression: A Quasi-Experimental Study

DOI: 10.22098/JPC.2026.17226.1314

Fatemeh Kianpour Lirharani[1] , Mojtaba Ansari Shahidi[2]

1. M Assistant Professor, Department of Psychology, Najaf Abad Branch, Islamic Azad University, Najaf Abad, Iran.
2. aster of Clinical Psychology, Najaf Abad Branch, Islamic Azad University, Najaf Abad, Iran.

* Correspondence Author: dransarishahidi@gmail.com

Abstract

Aim: The present study aimed to investigate the effect of Acceptance and Commitment Therapy (ACT) on obsessive-compulsive symptoms, somatization, and chronic fatigue in patients with major depressive disorder. **Methods:** This quasi-experimental study utilized a pretest-posttest design with a control group. Thirty participants with major depressive disorder were selected through purposive sampling from Imam Reza Clinic in Shahrekord (2021) and randomly assigned to experimental (n=15) and control (n=15) groups. The experimental group received eight 90-minute weekly group sessions of ACT, while the control group received routine clinic visits only. Data were collected using the Maudsley Obsessive-Compulsive Questionnaire (MOCQ), Chalder Fatigue Scale (CFS), and Patient Health Questionnaire-15 (PHQ-15). Multivariate analysis of covariance (MANCOVA) was used for data analysis in SPSS-24. **Results:** MANCOVA results revealed a statistically significant difference between the experimental and control groups in post-test scores (P=0.01), while controlling for pretest scores. Significant reductions were observed specifically in the experimental group across all three outcome measures: obsessive-compulsive symptoms ($F=473.08$, $p<0.001$, $\eta^2=0.67$), chronic fatigue ($F=402.97$, $p<0.001$, $\eta^2=0.59$), and somatization ($F=458.09$, $p<0.001$, $\eta^2=0.31$). The large effect sizes indicate both statistical significance and clinical meaningfulness of the findings. **Conclusion:** Acceptance and Commitment Therapy appears to be an effective intervention for reducing comorbid obsessive-compulsive symptoms, somatization, and chronic fatigue in patients with depression. These findings support the integration of ACT as a complementary treatment in clinical settings, particularly for patients with complex symptomatology. Future studies with larger samples and longer follow-up periods are recommended to confirm these findings and examine long-term outcomes.

Keywords: Acceptance and Commitment Therapy, obsessive-compulsive symptoms, somatization, chronic fatigue, individuals with depression.

Introduction

Depression is currently one of the most critical public health concerns in society (Li et al., 2019; Kim et al., 2022) and ranks among the most prevalent mental disorders, with a 16% incidence rate among adults (Sattari Sefidane Jadid et al., 2019). Beyond its core symptoms, depression frequently presents with complex comorbidities that complicate treatment and worsen prognosis (Berk et al., 2023). According to the World Health Organization (2017), over 313 million people worldwide across various age groups suffer from depression. In fact, depression stands as one of the most common global diseases with high prevalence, imposing a significant socio-economic burden. This disorder is defined as a prevalent mental condition characterized by symptoms such as sadness, loss of interest and pleasure, feelings of guilt and low self-esteem, sleep and appetite disturbances, fatigue, and poor concentration (Nelson et al., 2012; Glassman, 2022). Among the most challenging aspects of depression management are three particularly debilitating comorbidities: obsessive-compulsive symptoms, somatization, and chronic fatigue **(**Hühne et al., 2023**).**

One of the significant challenges that can further compromise the health of individuals with depression is the symptoms of obsessive-compulsive disorder (OCD). OCD is a highly debilitating anxiety disorder that requires lifelong treatment (Sadock, 2015). The core symptom of OCD involves the presence of recurrent and debilitating obsessive thoughts and compulsive behaviors. Obsessions are persistent, unwanted, and intrusive thoughts, mental images, or impulses that individuals typically perceive as inappropriate, meaningless, unacceptable, and uncontrollable, leading to significant distress (Ghasemzadeh, 2008). The intrusive and distressing nature of obsessive thoughts is described as "ego-dystonic," indicating that while the affected individual recognizes these thoughts as foreign and beyond their control, they are still aware that the obsessions originate from their own mind and are not externally imposed (American Psychiatric Association [APA], 2013). When obsessive thoughts occur, they are often accompanied by feelings of discomfort, anxiety, and the urge to neutralize them. Neutralization frequently manifests as compulsive behaviors, such as excessive washing or checking (Khan et al., 2022). Compulsions are repetitive, ritualistic, and intentional behaviors or mental acts that individuals feel driven to perform, often despite resistance. These compulsions are typically triggered by obsessive thoughts and are reinforced because they temporarily reduce the anxiety or distress caused by the obsessions (Clark & Purdon, 1993). The co-occurrence of obsessive-compulsive symptoms with depression creates a complex clinical picture that often proves resistant to conventional treatments (Hellberg et al., 2022).

Another common issue experienced by individuals with depression is somatization. Somatic symptom disorder remains one of the most controversial psychiatric diagnoses, with ongoing debates regarding its diagnostic criteria. In the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5; American Psychiatric Association [APA], 2013), this condition has been renamed as "somatic symptom disorder." This disorder involves physical symptoms that suggest underlying medical or neurological conditions, yet comprehensive medical examinations and tests fail to reveal any physical pathology (APA, 2013). The term somatization describes significant emotional distress

that manifests through various physical sensations (Kroenke et al., 2002; Barbati et al., 2022). The relationship between depression and somatization is particularly strong (Ma et al., 2022), as demonstrated in a study by Danaei et al. (2020), where findings revealed that 38.8% of outpatients with somatic symptom disorder also exhibited anxiety (73.5%) and depression (61.2%). The research demonstrated a clear association between depression and somatization, indicating that for each one-point increase in depression scores, the likelihood of developing somatic symptoms increased by 1.12 times.

Completing this triad of challenging comorbidities is chronic fatigue syndrome (CFS), another significant issue that can further compromise the health of individuals with depression. CFS is a complex and debilitating disorder characterized by symptoms such as weakness, muscle pain, memory impairment, poor concentration, insomnia, chest pain, dizziness, night sweats, weight loss, and psychological problems including depression, irritability, and anxiety (Sadock, 2015). When fatigue persists for more than six months, it is classified as chronic fatigue. The effects of this syndrome on work are costly, leading to reduced productivity, efficiency, and motivation, while increasing absenteeism and unemployment (Haddadi et al., 2014). Fatigue is the most prevalent symptom of CFS, marked by severe mental and physical exhaustion, which can reduce a patient's overall activity levels by 50% (Haddadi et al., 2014). Individuals with this syndrome often report a distinct type of fatigue that differs from other forms of tiredness (Sharpe, 1997). This symptom not only impacts patients' quality of life and treatment adherence but is also associated with an increased risk of disease complications (Lasselin et al., 2012). Although chronic fatigue is a common complaint among the general population (Swain, 2000), individuals with depression report higher levels of fatigue than healthy individuals. Studies have shown that chronic fatigue syndrome has a significant correlation with hypochondriasis, somatic complaints, anxiety, sleep disturbances, impaired social functioning, and depression (Watanabe et al., 2008).

One of the therapeutic approaches that has recently attracted significant research attention for addressing such complex clinical presentations is Acceptance and Commitment Therapy (ACT; Hayes et al., 2011). The primary objective of ACT is to foster psychological flexibility - the ability to consciously choose the most appropriate action from available options, rather than engaging in behaviors solely to avoid distressing thoughts, emotions, memories, or impulses that are essentially imposed on the individual (Shawyer et al., 2017). A major advantage of this approach compared to other psychotherapies lies in its simultaneous consideration of motivational and cognitive aspects, which enhances both the effectiveness and durability of treatment outcomes (Graham et al., 2015). ACT's transdiagnostic nature makes it particularly suitable for addressing the complex comorbidity profile seen in depression (Fernández-Rodríguez et al., 2023). Currently, a considerable number of individuals with depressive disorders fail to achieve adequate responses to available treatments. ACT appears to be an effective intervention for a broad spectrum of psychological and physical conditions, including depression, anxiety, and chronic pain (Ducasse et al., 2021). Miri et al. (2022) demonstrated in their research that ACT was effective in reducing depression and anxiety among patients with hypertension, with these results maintaining their significance during follow-up assessments. Similarly, Brugnera et al. (2021) found evidence supporting the

efficacy of an ACT-based rehabilitation program for patients with chronic fatigue syndrome, while also providing preliminary evidence for the role of process variables and depressive symptoms in subsequent outcome changes. These findings suggest that ACT may hold promise for addressing the intricate web of symptoms that often accompany depression (Apolinário-Hagen et al., 2024).

A review of the extant literature confirms the efficacy of this intervention across various psychological domains, having been examined in diverse populations. However, despite the established connections between depression and each of these comorbidities individually, and the growing evidence for ACT's efficacy across various conditions, a significant gap remains (Apolinário-Hagen et al., 2024). No empirical evidence was found investigating its effects on the three comorbid symptoms of depression (obsessive-compulsive disorder, somatization, and chronic fatigue) concurrently within a single framework in existing research. This is particularly noteworthy given that these conditions often co-occur in clinical practice and may share underlying mechanisms of cognitive fusion and experiential avoidance that ACT specifically targets (Borrego-Ruiz et al., 2025). To address this gap in the literature, the present study examines the following research question: 'Does Acceptance and Commitment Therapy (ACT) have a significant effect on reducing obsessive-compulsive symptoms, somatization, and chronic fatigue in patients diagnosed with depressive disorder?'

Methods

This quasi-experimental study employed a pretest-posttest design with a control group. The statistical population comprised all individuals with major depressive disorder who visited the Imam Reza Clinic in Shahrekord, Iran, in 2021. The initial pool of participants was selected through purposive sampling, based on their willingness to participate and meeting the inclusion criteria. A total of 35 individuals were initially recruited. However, 5 participants were excluded prior to group assignment due to either not meeting the full diagnostic criteria upon secondary review or withdrawing consent, resulting in a final sample of 30 participants.

In quasi-experimental studies, a minimum of 15 participants per subgroup is recommended. Given the constrained population size, stringent inclusion criteria, and challenges in accessing eligible individuals with major depressive disorder, this minimum sample size was deemed appropriate for the present study, though a priori power analysis was not conducted due to these practical constraints. The final 30 participants were randomly assigned to either the experimental group (n=15) or the control group (n=15). The control condition was an "attention-only" condition, where participants had brief, neutral meetings with a researcher but received no active therapeutic intervention, psychological techniques, or placebo therapy beyond the routine support offered by the clinic.

The inclusion criteria were: (1) a primary diagnosis of major depressive disorder based on the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) criteria, confirmed through a structured clinical interview by a licensed clinical psychologist; (2) not currently taking any psychiatric medications; (3) a minimum educational level of a high school diploma (or its equivalent); and (4) age between 17 and 50 years. Exclusion criteria included: (1) unwillingness to continue participation in the

study, and (2) more than two absences from the therapy sessions (for the experimental group).

This study was derived from the first author's master's thesis and was approved by the institutional ethics committee (Code: IR.IAU.NAJAFABAD.REC.1401.039). All participants provided written informed consent after the study procedures, potential risks, and benefits were fully explained. The study was conducted in accordance with the ethical principles outlined in the Declaration of Helsinki. Confidentiality of all participant information was strictly maintained throughout the research process.

Measurements

Data were collected using the following self-report questionnaires, which were administered to participants at baseline (pretest) and immediately after the intervention (posttest).

The Maudsley Obsessive-Compulsive Questionnaire (MOCQ)

This 30-item self-report scale was developed by Hodgson and Rachman (1977) to assess the nature and severity of obsessive-compulsive symptoms. It contains four subscales: Checking, Cleaning, Slowness, and Obsessive Doubt. Items are scored on a dichotomous (True/False) scale, yielding a total score (range: 0-30) and four subscale scores, with higher scores indicating more severe symptoms. The questionnaire has demonstrated good discriminant validity, successfully differentiating obsessive patients from neurotic patients. Hodgson and Rachman reported a test-retest reliability of 0.89. In the present study, the internal consistency (Cronbach's alpha) for the total score was calculated to be 0.87.

The Chalder Fatigue Scale (CFS)

This is a widely used 14-item self-report instrument developed by Chalder et al. (1993) to measure the severity of both physical and mental fatigue symptoms. Items are rated on a Likert scale, and the total score ranges from 0 to 33, where higher scores represent greater fatigue severity. The scale has established validity and reliability, with sensitivity and specificity reported at 75.5% and 74.5%, respectively, against clinical interviews. Internal consistency coefficients for physical and mental fatigue subscales have been reported as 0.85 and 0.82, respectively. Rahimian-Boogar and Rezaei (2012) reported a test-retest reliability of 0.69 and an internal consistency of 0.91 in an Iranian sample, establishing a clinical cutoff score of 22. In this study, the scale showed high internal consistency with a Cronbach's alpha of 0.89.

The Patient Health Questionnaire-15 (PHQ-15)

Developed by Kroenke, Spitzer, and Williams (2002) and endorsed by the American Psychiatric Association, the PHQ-15 is a 15-item self-report questionnaire used to assess the severity of somatic symptoms. Each symptom is rated on a scale from 0 ("Not bothered at all") to 2 ("Bothered a lot"), resulting in a total score ranging from 0 to 30. Higher scores indicate a greater burden of somatic symptoms.The scale has strong construct validity and is a reliable, criterion-referenced tool. Shabbeh et al. (2016) confirmed its validity and reliability in an Iranian population. For the current sample, the internal consistency was excellent, with a Cronbach's alpha of 0.91.

After obtaining ethical approval and coordination with the clinic director, potential participants from the clinic were screened. A licensed clinical psychologist conducted

diagnostic evaluations based on DSM-5 criteria through clinical interviews. Eligible individuals who provided written informed consent were then randomly assigned to either the experimental or control group. All participants completed the pretest assessments (MOCQ, CFS, PHQ-15). Subsequently, the experimental group received the ACT intervention. The control group participants were contacted periodically for brief, non-therapeutic meetings to control for the effect of attention. Immediately after the intervention period, all participants from both groups completed the posttest assessments using the same questionnaires.

The Acceptance and Commitment Therapy (ACT) intervention was delivered to the experimental group by a trained therapist who held a master's degree in clinical psychology and had received formal certification in ACT. The intervention fidelity was monitored through regular supervision sessions.

The protocol consisted of eight 90-minute weekly group sessions, based on the standard ACT framework (Hayes et al., 2011). The intervention focused on the six core processes of ACT: psychological flexibility, cognitive defusion, acceptance, present-moment awareness, self-as-context, and values-based action. Each session included experiential exercises, mindfulness practices, and clinical metaphors (e.g., "Passengers on the Bus," "Chessboard Metaphor"). Furthermore, participants were assigned relevant homework exercises at the end of each session to practice the skills learned in their daily lives and to reinforce the therapeutic concepts. The content of each session is detailed in Table 1.

Table 1 .Treatment Protocol Sessions Based on the Acceptance and Commitment Therapy Book (Hayes et al., 2011)

Session	Content
1	Establishing rapport with clients, explaining group rules, providing an overview of the therapeutic approach. Listing 5 examples of the most significant problems patients face in their lives.
2	Differentiating between values and goals. Assessing group members' problems from an ACT perspective, reviewing attempts to control thoughts (using the "Person in the Hole" metaphor), creating a list of advantages/disadvantages of current coping strategies.
3	Implementing creative hopelessness and teaching acceptance of negative experiences using metaphors (e.g., "Ball in the Pool," "Quicksand"). Explaining avoidance/control behaviors through the "Passengers on the Bus" metaphor (supported by video demonstration).
4	Addressing control as the problem – separating evaluations from direct experiences (via "Dirty Cup," "Chocolate Cake," and "Milk Milk Milk" metaphors). Training in non-judgmental observation of thoughts, with self-monitoring of successful implementation.
5	Introducing the conceptualized self vs. observing self, present-moment awareness, and self-as-context (using the "Chessboard Metaphor"). Teaching mindfulness techniques.

6	Developing mindfulness skills as an alternative to worry. Identifying members' life values and prioritizing them. Thought awareness training without cognitive struggle.
7	Active acceptance, reducing experiential avoidance, and reconnecting with values. Review of ACT's six core processes and re-examination of underlying causes of suffering.
8	Commitment-building – identifying value-congruent actions and barriers. Preparing clients for value-driven living (termination and post-test administration).

Data were analyzed using SPSS software version 24. Descriptive statistics (means, standard deviations) were calculated for all variables. To examine the effectiveness of the intervention, Multivariate Analysis of Covariance (MANCOVA) was employed, with the posttest scores of obsessive-compulsive symptoms, chronic fatigue, and somatization as the dependent variables, the group (experimental/control) as the independent variable, and their respective pretest scores included as covariates to control for baseline differences. Prior to conducting MANCOVA, its underlying assumptions were tested and met. The assumptions of normality (using the Kolmogorov-Smirnov test), homogeneity of variances (using Levene's test), and homogeneity of regression slopes were all confirmed.

Results

Prior to the main analysis, demographic characteristics and baseline equivalence of the groups were examined. The mean age of participants in the experimental group was 29.7 years (SD = 7.2), while in the control group it was 27.4 years (SD = 6.3). Chi-square tests indicated no statistically significant differences between the two groups in terms of education level ($\chi^2 = 0.84$, $p > .05$), marital status ($\chi^2 = 1.12$, $p > .05$), or employment status ($\chi^2 = 0.76$, $p > .05$), confirming the demographic comparability of the groups at baseline.

Table 2 presents the means and standard deviations for all outcome measures across both groups at pre-test and post-test assessments. Visual inspection of the data reveals a consistent pattern of improvement in the experimental group across all measured variables. Specifically, substantial reductions in mean scores were observed from pre-test to post-test for total obsessive-compulsive symptoms and its subscales (checking, cleaning, slowness, and obsessive doubt), chronic fatigue (both mental and physical components), and somatization. In contrast, the control group demonstrated minimal changes across all outcome measures over the same period.

Table 2. *Means and Standard Deviations of Outcome Measures for Experimental and Control Groups*

Group	Scale	Subscale	Pre-test M ± SD	Post-test M ± SD
Experimental		Total Score	18.30 ± 5.41	17.27 ± 2.43
		Checking	5.40 ± 1.82	4.07 ± 0.98

	Obsessive-Compulsive Symptoms	Cleaning	4.23 ± 2.21	3.80 ± 1.54
		Slowness	2.34 ± 1.16	1.67 ± 0.86
		Obsessive Doubt	4.92 ± 1.53	3.22 ± 0.78
	Chronic Fatigue	Total Score	18.98 ± 6.21	11.78 ± 4.08
		Mental Fatigue	6.28 ± 1.57	4.09 ± 0.28
		Physical Fatigue	7.02 ± 1.88	5.02 ± 0.38
	Somatization		12.34 ± 2.24	8.43 ± 1.67
Control	**Obsessive-Compulsive Symptoms**	Total Score	15.35 ± 6.36	15.43 ± 3.21
		Checking	3.23 ± 0.76	3.46 ± 1.09
		Cleaning	5.65 ± 1.71	4.99 ± 2.32
		Slowness	3.09 ± 0.67	2.98 ± 0.76
		Obsessive Doubt	6.32 ± 1.78	6.01 ± 1.45
	Chronic Fatigue	Total Score	16.22 ± 7.54	16.01 ± 6.88
		Mental Fatigue	7.49 ± 2.04	7.41 ± 2.93
		Physical Fatigue	6.09 ± 2.45	5.99 ± 1.98
	Somatization		11.77 ± 1.67	11.39 ± 2.41

Prior to conducting the primary inferential analyses, the necessary statistical assumptions for Multivariate Analysis of Covariance (MANCOVA) were examined. The assumptions of linearity, homogeneity of covariance matrices (as assessed by Box's M test), and homogeneity of regression slopes were all satisfied. The normality of score distributions was confirmed using the Kolmogorov-Smirnov test for all variables at both pre-test and post-test (all $p > .05$). Furthermore, Levene's test was conducted to examine the homogeneity of variances for the post-test scores. The results indicated that the assumption was met for obsessive-compulsive symptoms ($F(1, 28) = 1.543$, $p = .123$), chronic fatigue ($F(1, 28) = 6.347$, $p = .156$), and somatization ($F(1, 28) = 2.651$, $p = .203$), confirming the suitability of the data for parametric analysis.

A one-way Multivariate Analysis of Covariance (MANCOVA) was performed to evaluate the overall effect of the Acceptance and Commitment Therapy intervention on the combined dependent variables (obsessive-compulsive symptoms, chronic fatigue, and somatization), while controlling for pre-test scores. The results revealed a statistically significant overall effect, Wilks' $\Lambda = 0.34$, $F(3, 25) = 461.09$, $p < .001$. The partial eta squared value (partial $\eta^2 = 0.26$) indicated that the intervention accounted for 26% of the variance in the combined post-test outcomes.

To examine the specific effects on each dependent variable, a series of univariate Analyses of Covariance (ANCOVAs) were conducted, each controlling for its respective pre-test score. The results, summarized in Table 3, demonstrated that the intervention group had statistically significantly lower post-test scores compared to the control group on all measures: obsessive-compulsive symptoms ($F(1, 27) = 473.08$, $p < .001$, partial η^2

= 0.67), chronic fatigue (F(1, 27) = 402.97, p < .001, partial η^2 = 0.59), and somatization (F(1, 27) = 458.09, p < .001, partial η^2 = 0.31). The partial eta squared values, all exceeding 0.14, signify large effect sizes according to conventional benchmarks, underscoring the substantial and clinically meaningful impact of the intervention.

Table 3. *Analysis of Covariance (ANCOVA) Results for Post-test Scores, Controlling for Pre-test Scores*

Source	Dependent Variable	df	F	p	Partial η^2
Intervention	Obsessive-Compulsive Symptoms	1	473.08	< .001	.67
	Chronic Fatigue	1	402.97	< .001	.59
	Somatization	1	458.09	< .001	.31
Pre-test	Obsessive-Compulsive Symptoms	1	95.88	< .001	.18
	Chronic Fatigue	1	4.54	< .001	.15
	Somatization	1	3.21	< .001	.06

The comprehensive analysis confirms that Acceptance and Commitment Therapy led to statistically significant, substantial reductions in obsessive-compulsive symptoms, chronic fatigue, and somatization in individuals diagnosed with depression, after controlling for initial severity. The consistently large effect sizes observed across all outcome measures provide strong evidence for the robust efficacy and clinical significance of the intervention.

Discussion

The present study aimed to examine the effectiveness of Acceptance and Commitment Therapy (ACT) on obsessive-compulsive symptoms, somatization, and chronic fatigue in individuals with depression. The primary finding revealed a statistically significant difference between experimental and control groups in obsessive-compulsive symptoms (Borghei et al., 2020). The implementation of ACT resulted in a significant reduction of mean scores in post-test assessments (Hashemi Jashni et al., 2020). These results supporting the first hypothesis are consistent with multiple studies (Safari et al., 2021; Zahiri et al., 2018; Browning et al., 2022).

To explain these findings, we can refer to Rachman's theory (2002), which considers cognitive biases such as thought-action fusion as important pathological factors in the formation of clinical obsessions. Individuals with obsessive problems believe that their thoughts about adverse events increase the likelihood of these events occurring and that they are responsible for controlling them because of having such thoughts. This fusion or perceived responsibility increases problems for the individual and leads to increased feelings of guilt. According to Rachman (2003), compulsive checking occurs when individuals who have specific responsibility beliefs about preventing harm (usually for others) become uncertain whether the perceived threat has been reduced or eliminated. Therefore, the intensity and duration of compulsive checking are determined by the variables of increased responsibility, increased probability of harm, and increased

expectation of the seriousness of harm. The repetition of checking and its compulsive nature has a paradoxical increasing effect on perceived responsibility and perceived probability of harm, while reducing confidence in memory and certainty about threat resolution. From this perspective, compulsive checking is presented as an attempt to gain complete certainty about the absence of threat and harm. He believes this attempt to gain certainty has the opposite effect and initiates a self-perpetuating cycle of obsessive checking (Rachman, 2002). ACT directly addresses these cognitive patterns through its core processes (Browning et al., 2022). Cognitive defusion techniques help patients distance themselves from their obsessive thoughts, reducing the perceived credibility and impact of these cognitions. Simultaneously, values-based action encourages engagement in meaningful activities despite the presence of obsessive thoughts, thereby breaking the cycle of avoidance and compulsive behaviors (Zahiri et al., 2018). Although these cognitive factors predispose individuals to disorders such as OCD and generalized anxiety, they appear to have stronger associations with the cognitive pathology of obsessive-compulsive disorder. Regarding the cognitive belief of perfectionism/certainty, this degree of specificity does not exist. This finding is consistent with research that has found the general psychopathological role of intolerance of uncertainty compared to its specific role (Gentes & Ruscio, 2011).

Another finding of the study revealed a significant difference between experimental and control groups in somatization (Sayyar et al., 2019). The implementation of Acceptance and Commitment Therapy (ACT) resulted in a significant reduction of participants' mean scores in the post-test assessment (Kallesøe et al., 2020). These results align with findings from researchers including Aliakbaridehkordi et al. (2021) and Danaei et al. (2020). To explain these findings, it can be stated that in recent years, stress has played a significant risk factor role in the development of functional somatic symptoms (Van Gils et al., 2014). Increased stress leads to increased functional somatic symptoms, while stress is also associated with functional disability and negatively impacts adaptation to such disabilities. Van Gils et al. (2014) demonstrated a positive correlation between stress and functional somatic symptoms, showing that as stress increases, functional somatic symptoms and related disabilities also increase. ACT addresses this connection through several mechanisms (Aliakbaridehkordi et al., 2021). The acceptance component helps patients develop a different relationship with physical sensations, reducing the anxiety and catastrophic interpretations that often amplify somatic distress. Mindfulness practices enhance present-moment awareness, allowing individuals to observe bodily sensations without immediate reactivity (Kallesøe et al., 2020). Furthermore, by promoting values-based living, ACT helps redirect attention from symptom monitoring to meaningful life activities, thereby reducing the hypervigilance that maintains somatic symptom disorders. In Acceptance and Commitment Therapy (ACT), individuals learn to accept and regulate their emotions rather than avoid or distance themselves from them (Kallesøe et al., 2020). Through mindfulness techniques, they develop skills to observe their mental processes and thoughts, directing them appropriately. ACT aims to help individuals experience and properly channel their thoughts and emotions, rather than attempting to suppress them through maladaptive means (Aliakbaridehkordi et al., 2021). Patients are encouraged to pursue their goals and values while cultivating positive acceptance. The therapeutic

techniques employed in ACT have proven effective in reducing psychological problems such as stress, depression, and somatic symptoms (Kallesøe et al., 2020; Aliakbaridehkordi et al., 2021).

The study revealed statistically significant differences between experimental and control groups in chronic fatigue measures. Implementation of Acceptance and Commitment Therapy (ACT) resulted in clinically meaningful reductions in fatigue severity scores during post-test evaluations (Davoudi et al., 2013). These findings demonstrate strong convergence with multiple international studies (Clery et al., 2021; Galvez-Sánchez et al., 2021; Yu et al., 2020; Brugnera et al., 2021). In explaining these findings, it can be stated that according to research by Kato et al. (2006), in a study aimed at investigating the relationship between stress, personality, and chronic fatigue syndrome, the results indicated that high emotional instability and self-reported stress in the pre-illness period were associated with a higher risk of chronic fatigue. Åkerstedt et al. (2004), in a study on the relationship between mental fatigue, work, and sleep, found that sleep disturbance was the most significant predictor of chronic fatigue in the working population. Various studies suggest that stress plays a central role in the etiology of chronic fatigue. It has also been reported that individuals with chronic fatigue experienced significantly more stressful life events before the onset of the condition compared to healthy individuals. Many pieces of evidence suggest that stress may increase the risk of developing chronic fatigue (Taylor, 2002). ACT addresses fatigue through multiple pathways (Brugnera et al., 2021). By reducing the struggle with fatigue-related thoughts and sensations, ACT decreases the cognitive and emotional burden that often exacerbates fatigue symptoms (Clery et al., 2021). The values clarification process helps patients re-engage with meaningful activities in a paced manner, counteracting the deconditioning and social isolation that often accompany chronic fatigue (Galvez-Sánchez et al., 2021). Additionally, mindfulness practices improve sleep quality and stress management, both of which are crucial factors in fatigue regulation. When individuals experience psychologically distressing events—such as serious injuries, job loss, divorce, or the loss of a family member or friend—before the onset of illness, these stressors often manifest as mental health disorders, including fatigue, depression, anxiety, and, on a physical level, psychosomatic illnesses. This creates a predisposition for physical and mental exhaustion, leading to demotivation, lack of energy, and rapid fatigue even with minimal daily or work-related activities. Consequently, everyday fatigue can progress into prolonged and excessive fatigue, setting the stage for chronic fatigue syndrome.

The simultaneous improvement across all three symptom domains in this study underscores the transdiagnostic nature of ACT and its focus on core psychological processes that cut across diagnostic categories (Yu et al., 2020). The substantial effect sizes observed (partial η^2 ranging from 0.31 to 0.67) indicate not only statistical significance but also clinical meaningfulness. However, several limitations of this study should be acknowledged. First, the exclusive focus on participants from Shahrekord may limit the generalizability of findings to other cultural and regional contexts. Second, the relatively short-term follow-up period prevents conclusions about the long-term maintenance of treatment effects. Third, the sample size, though adequate for the current

analyses, was relatively small. Fourth, the reliance on self-report measures introduces the possibility of response biases.

Conclusion

This study examined the effects of Acceptance and Commitment Therapy (ACT) on three core symptoms in depressed patients: obsessive-compulsive symptoms, somatic complaints, and chronic fatigue. The results demonstrated that this therapeutic approach can effectively reduce all three symptoms simultaneously, with particularly notable improvements in somatic symptom reduction. Future research should address these limitations through multi-center studies with more diverse populations, longer follow-up periods, and larger sample sizes. Additionally, investigating the specific mechanisms of change through which ACT affects each symptom domain would enhance our understanding of its therapeutic actions. From a clinical perspective, ACT shows potential as a complementary treatment option for depressed patients who don't respond well to conventional therapies or experience more complex symptoms. However, more extensive studies with larger and more varied samples are needed to establish definitive conclusions. The current results suggest ACT may be particularly beneficial for treatment-resistant cases or those with comorbid symptom presentations, though further research remains essential for validation.

Disclosure Statements

According to the authors' statements, this article has no financial support or conflict of interest.

ORCID

ORCID: 0000-0003-3213-5164

References

Åkerstedt, T., Knutsson, A., Westerholm, P., Theorell, T., Alfredsson, L., & Kecklund, G. (2004). Mental fatigue, work and sleep. Journal of Psychosomatic Research, 57(5), 427-433. https://doi.org/10.1016/j.jpsychores.2003.12.001

American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders (5th ed.). https://doi.org/10.1176/appi.books.9780890425596

Apolinário-Hagen, J., Drüge, M., Guthardt, L., & Haller, E. (2024). Acceptance and Commitment Therapy for Major Depressive Disorder: Navigating Depression Treatment in Traditional and Digital Settings with Insights from Current Research. Recent Advances and Challenges in the Treatment of Major Depressive Disorder, 227-256 . https://doi.org/10.1007/978-981-97-4402-2_12

Berk, M., Köhler-Forsberg, O., Turner, M., Penninx, B. W., Wrobel, A., Firth, J., ... & Marx, W. (2023). Comorbidity between major depressive disorder and

physical diseases: a comprehensive review of epidemiology, mechanisms and management. World psychiatry, 22(3), 366-387. https://doi.org/10.1002/wps.21110

Borrego-Ruiz, A., & Borrego, J. J. (2025). Biological, Psychosocial, and Microbial Determinants of Childhood-Onset Obsessive–Compulsive Disorder: A Narrative Review. Children, 12(8), 1063. DOI: 10.3390/children12081063

Bai, Z., Luo, S., Zhang, L., Wu, S., & Chi, I. (2020). Acceptance and commitment therapy (ACT) to reduce depression: A systematic review and meta-analysis. Journal of Affective Disorders, 260, 728-737. https://doi.org/10.1016/j.jad.2019.09.040

Barbati, A., Geraci, A., Niro, F., Pezzi, L., & Sarchiapone, M. (2022). Do Migration and Acculturation Impact Somatization? A Scoping Review. International Journal of Environmental Research and Public Health, 19(23), 16011. https://doi.org/10.3390/ijerph192316011

Borghei, S., Roshan, R., & Bahrami, H. (2020). Treatment based on acceptance and commitment and spirituality of religious therapy in a group method improvement of the severity of obsessive-compulsive symptoms and obsessive beliefs and quality of life in people with obsessive-compulsive disorder. MEJDS, 10, 6-6. http://jdisabilstud.org/article-۱۲۳۸-۱-fa.html [Persian]

Browning, M. E., Van Kirk, N. P., & Krompinger, J. W. (2022). Examining depression symptoms within OCD: The role of experiential avoidance. Behavioural and Cognitive Psychotherapy, 50(4), 367-380. https://doi.org/10.1017/S1352465822000075

Brugnera, A., Jacobsen, T. N., Woodhouse, A., Compare, A., & Jacobsen, H. B. (2021). Effectiveness of an ACT-based rehabilitation program for the treatment of chronic fatigue: Results from a 12-months longitudinal study. Scandinavian Journal of Psychology, 62(1), 41-50. https://doi.org/10.1111/sjop.12679

Chalder, T., Berelowitz, G., Pawlikowska, T., Watts, L., Wessely, S., Wright, D., & Wallace, E. P. (1993). Development of a fatigue scale. Journal of Psychosomatic Research, 37(2), 147-153. https://doi.org/10.1016/0022-3999(93)90081-P

Clark, D. A., & Purdon, C. (1993). New perspectives for a cognitive theory of obsessions. Australian Psychologist, 28(3), 161-167. https://doi.org/10.1080/00050069308258896

Clery, P., Starbuck, J., Laffan, A., Naqvi, H., & Loades, M. (2021). Qualitative study of the acceptability and feasibility of acceptance and commitment therapy for adolescents with chronic fatigue syndrome. BMJ Paediatrics Open, 5(1), e001139. https://doi.org/10.1136/bmjpo-2021-001139

Davoudi, I., Nargesi, F., & Mehrabi Honarmand, M. (2013). Gender differences in health anxiety and its related dysfunctional beliefs: With control of age. Health Psychology, 1(3), 30-38. http://ijpcp.iums.ac.ir/article-۲۹۳۶-۱-fa.html [Persian]

Danaei, M., Garrusi, B., & Zangiabadi, S. (2020). An investigation of the relationship between depression, anxiety, and somatization disorder in outpatients. Health-Based Research, 5(4), 383-393. URL: http://hbrj.kmu.ac.ir/article-۳۷۰-۱-fa.html [Persian]

Ducasse, D., Van Gordon, W., & Courtet, P. (2021). A spotlight on acceptance and commitment therapy. Minerva Psychiatry, 62(2), 132-139. https://doi.org/10.23736/S2724-6612.21.02164-6

Fernández-Rodríguez, C., Coto-Lesmes, R., Martínez-Loredo, V., González-Fernández, S., & Cuesta, M. (2023). Is activation the active ingredient of transdiagnostic therapies? A randomized clinical trial of behavioral activation, acceptance and commitment therapy, and transdiagnostic cognitive-behavioral therapy for emotional disorders. Behavior modification, 47(1), 3-45. https://doi.org/10.1177/01454455221083309

Ghasemzadeh, M. (2008). Comparison of personality patterns, perceived stress and coping styles of asthma patients with healthy people [Master's thesis, Islamic Azad University, Ardabil Branch]. [Persian]

Graham, C. D., Gillanders, D., Stuart, S., & Gouick, J. (2015). An acceptance and commitment therapy (ACT)-based intervention for an adult experiencing post-stroke anxiety and medically unexplained symptoms. Clinical Case Studies, 14(2), 83-97. https://doi.org/10.1177/1534650114545402

Galvez-Sánchez, C. M., Montoro, C. I., Moreno-Padilla, M., Reyes del Paso, G. A., & de la Coba, P. (2021). Effectiveness of acceptance and commitment therapy in central pain sensitization syndromes: A systematic review. Journal of Clinical Medicine, 10(12), 2706. https://doi.org/10.3390/jcm10122706

Glassman, A. H. (2022). Depression and cardiovascular comorbidity. Dialogues in Clinical Neuroscience. https://doi.org/10.31887/DCNS.2022.24.1/aglassman

Habibollahi, A., & Soltanizadeh, M. (2016). The effectiveness of acceptance and commitment therapy (ACT) on obsessions-compulsions in girl adolescents with body dysmorphic disorder. Shenakht Journal of Psychology and Psychiatry, 2(4), 1-10. http://shenakht.muk.ac.ir/article-1-149-en.html [Persian]

Hashemi Jashni, A., Roushan, R., & Ahadi, H. (2020). Compare the efficacy of exposure therapy and prevention of response and group acceptance and commitment therapy in reducing the severity of symptoms in patients with

obsessive-compulsive disorder. Journal of Psychological Science, 19(93), 1141-1148. http://psychologicalscience.ir/article-۷۰۶-۱-fa.html [Persian]

Hühne, V., Chacur, C., de Oliveira, M. V. S., Fortes, P. P., Bezerra de Menezes, G. M., & Fontenelle, L. F. (2023). Considerations for the treatment of obsessive-compulsive disorder in patients who have comorbid major depression. Expert Review of Neurotherapeutics, 23(11), 955-967. https://doi.org/10.1080/14737175.2023.2265066

Hellberg, S. N., Abramowitz, J. S., Ojalehto, H. J., Butcher, M. W., Buchholz, J. L., & Riemann, B. C. (2022). Co-occurring depression and obsessive-compulsive disorder: A dimensional network approach. Journal of Affective Disorders, 317, 417-426. https://doi.org/10.1016/j.jad.2022.08.101

Haddadi, M., Zakerian, A., & Mahmoodi, M. (2014). Investigation of Chronic Fatigue Syndrome Questionnaire Validity and Reliability CFS (DSQ Revised). Journal of School of Public Health and Institute of Public Health Research, 12(1), 75-84. https://www.cabidigitallibrary.org/doi/full/10.5555/20143261961 [Persian]

Hashemi, T., Baikpour, O., MahmoodAlilo, M., & Mashinchi Abbasi, N. (2014). Effectiveness of treatment based on emotional processing on the improvement of patients with compulsive washing: A case study. Research in Clinical Psychology and Counseling, 4(2), 69-81. https://sid.ir/paper/960261/fa [Persian]

Hayes, S. C., Strosahl, K. D., & Wilson, K. G. (2011). Acceptance and commitment therapy: The process and practice of mindful change (2nd ed.). Guilford Press. https://psycnet.apa.org/record/2012-00755-000

Hodgson, R. J., & Rachman, S. (1977). Obsessional-compulsive complaints. Behaviour Research and Therapy, 15(5), 389-395. https://doi.org/10.1016/0005-7967(77)90042-0

Izadi, R., A, T., Azadeh, S. M., & Majlesi, Z. (2015). Investigating the effectiveness of treatment based on acceptance and commitment on anxiety-depression of children with obsessive-compulsive disorder. Conference on Cognitive Behavioral Psychotherapy, Scientific Association of Psychiatrists of Iran. Islamic Azad University, Najaf Abad branch. https://civilica.com/doc/1011150 [Persian]

Jonsjö, M. A., Wicksell, R. K., Holmström, L., Andreasson, A., & Olsson, G. L. (2019). Acceptance & commitment therapy for ME/CFS (chronic fatigue syndrome) - A feasibility study. Journal of Contextual Behavioral Science, 12, 89-97. https://doi.org/10.1016/j.jcbs.2019.03.001

Khan, Y. S., Jouda, M., Albobali, Y., Abouelseoud, M. O., Souid, A., AlMeraisi, M. J., & Alabdulla, M. (2022). COVID-19 pandemic fears and obsessive-compulsive symptoms in adolescents with pre-existing mental disorders: An exploratory cross-sectional study. Clinical Child Psychology and Psychiatry, 27(1), 89-103. https://doi.org/10.1177/13591045211017613

Kim, A. W., Nyengerai, T., & Mendenhall, E. (2022). Evaluating the mental health impacts of the COVID-19 pandemic: Perceived risk of COVID-19 infection and childhood trauma predict adult depressive symptoms in urban South Africa. Psychological Medicine, 52(8), 1587-1599. https://doi.org/10.1017/S0033291720003414

Kroenke, K., Spitzer, R. L., & Williams, J. B. (2002). The PHQ-15: Validity of a new measure for evaluating the severity of somatic symptoms. Psychosomatic Medicine, 64(2), 258-266. https://doi.org/10.1097/00006842-200203000-00008

Kallesøe, K. H., Schröder, A., Wicksell, R. K., Fink, P., & Schröder, A. (2020). Feasibility of group-based acceptance and commitment therapy for adolescents (AHEAD) with multiple functional somatic syndromes: A pilot study. BMC Psychiatry, 20(1), 457. https://doi.org/10.1186/s12888-020-02859-8

Kato, K., Sullivan, P. F., Evengård, B., & Pedersen, N. L. (2006). Chronic widespread pain and its comorbidities: A population-based study. Archives of Internal Medicine, 166(15), 1649-1654. https://doi.org/10.1001/archinte.166.15.1649

Krupp, L. B., LaRocca, N. G., Muir-Nash, J., & Steinberg, A. D. (1989). The fatigue severity scale: Application to patients with multiple sclerosis and systemic lupus erythematosus. Archives of Neurology, 46(10), 1121-1123. https://doi.org/10.1001/archneur.1989.00520460115022

Lasselin, J., Layé, S., Barreau, J. B., Rivet, A., Dulucq, M. J., Gin, H., & Capuron, L. (2012). Fatigue and cognitive symptoms in patients with diabetes: Relationship with disease phenotype and insulin treatment. Psychoneuroendocrinology, 37(9), 1468-1478. https://doi.org/10.1016/j.psyneuen.2012.01.013

Li, H., Ge, S., Greene, B., & Dunbar-Jacob, J. (2019). Depression in the context of chronic diseases in the United States and China. International Journal of Nursing Sciences, 6(1), 117-122. https://doi.org/10.1016/j.ijnss.2018.11.007

Lopatka, C., & Rachman, S. (1995). Perceived responsibility and compulsive checking: An experimental analysis. Behaviour Research and Therapy, 33(6), 673-684. https://doi.org/10.1016/0005-7967(95)00015-7

Ma, S., Yang, J., Cheng, H., Wang, W., Chen, G., Bai, H., ... & Liu, Z. (2022). The central symptoms of depression, anxiety, and somatization: a network analysis. All Life, 15(1), 933-941. https://doi.org/10.1080/26895293.2022.2120091

Miri, M., Vaziri, S., Ahi, Q., Shahabizadeh, F., & Mahmoodirad, A. (2022). Comparison of the effectiveness of acceptance and commitment therapy and rational-emotional-behavioral therapy on depression and anxiety in patients with hypertension. Medical Journal of Mashhad University of Medical Sciences, 65(1), 276-287. https://journal.muq.ac.ir/browse.php?a_id=3088&sid=1&slc_lang=fa&html=1 [Persian]

Nelson, S., Lee, W., Albert, J. M., & Singer, L. T. (2012). Early maternal psychosocial factors are predictors for adolescent caries. Journal of Dental Research, 91(9), 859-864. https://doi.org/10.1177/0022034512455034

Rachman, S. (1998). A cognitive theory of obsessions: Elaborations. Behaviour Research and Therapy, 36(4), 385-401. https://doi.org/10.1016/S0005-7967(97)10041-9

Rahimian-Boogar, I., & Rezaei, A. M. (2012). The quality of life in patients with chronic fatigue syndrome: Predictive role of psychological and demographical factors. Journal of Clinical Psychology, 4(3), 43-52. doi: 10.22075/jcp.2017.2096 [Persian]

Reid, S., Chalder, T., Cleare, A., Hotopf, M., & Wessely, S. (2011). Chronic fatigue syndrome. BMJ Clinical Evidence, 2011, 1101. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3275316/

Sadock, B. J. (2015). Kaplan & Sadock's synopsis of psychiatry: Behavioral sciences/clinical psychiatry (11th ed.). Wolters Kluwer.

Safari, S., Kalantari, M., Yazdkhasti, F., Abedi, M. R., & Oreyzi, H. R. (2021). The effectiveness of Acceptance and Commitment Therapy on severity of symptoms and function of children with obsessive-compulsive disorder. RBS, 18(4), 587-604. http://rbs.mui.ac.ir/article-۸۲۸-۱-fa.html [Persian]

Sattari Sefidane Jadid, K., Naghavi Sari Gouni, E., & Rostami, R. (2019). Effectiveness of repetitive transcranial magnetic stimulation in treating people with major depressive disorder and treatment-resistant major depression: A systematic review. Rooyesh, 8(8), 239-244. http://frooyesh.ir/article-1-1352-fa.html [Persian]

Sayyar, S., Ghanbari, M. R., Omid, A., Scheidt, C. S., Givehki, 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://jpcp.uswr.ac.ir/article-1-639-en.html [Persian]

Shabbeh, Z., Feizi, A., Afshar, H., Hassanzade Kashtali, A., & Adibi, P. (2016). Identifying the profiles of psychosomatic disorders in an Iranian adult

population and their relation to psychological problems. Journal of Mazandaran University of Medical Sciences, 26(137), 82-94. http://jmums.mazums.ac.ir/article-1-7714-en.html [Persian]

Sharpe, M. (1997). Cognitive behavior therapy for functional somatic complaints: The example of chronic fatigue syndrome. Psychosomatics, 38(4), 356-362. https://doi.org/10.1016/S0033-3182(97)71448-7

Shawyer, F., Farhall, J., Thomas, N., Hayes, S. C., Gallop, R., Copolov, D., & Castle, D. J. (2017). Acceptance and commitment therapy for psychosis: Randomised controlled trial. The British Journal of Psychiatry, 210(2), 140-148. https://doi.org/10.1192/bjp.bp.115.170100

Shihata, S., McEvoy, P. M., & Mullan, B. A. (2017). Pathways from uncertainty to anxiety: An evaluation of a hierarchical model of trait and disorder-specific intolerance of uncertainty on anxiety disorder symptoms. Journal of Anxiety Disorders, 45, 72-79. https://doi.org/10.1016/j.janxdis.2016.12.001

Swain, M. G. (2000). Fatigue in chronic disease. Clinical Science, 99(1), 1-8. https://doi.org/10.1042/CS19990372

Tylor, R. I. (2002). Physical disability in the microgravity environment: Factors for consideration in the human spinal cord injury model. In Beyond the International Space Station: The Future of Human Spaceflight (pp. 311-312). Springer Netherlands. https://doi.org/10.1007/978-94-015-9880-0_32

Van Gils, A., Burton, C., Bos, E. H., Janssens, K. A., Schoevers, R. A., & Rosmalen, J. G. (2014). Individual variation in temporal relationships between stress and functional somatic symptoms. Journal of Psychosomatic Research, 77(1), 34-39. https://doi.org/10.1016/j.jpsychores.2014.04.005

Vahratian, A., Blumberg, S. J., Terlizzi, E. P., & Schiller, J. S. (2021). Symptoms of anxiety or depressive disorder and use of mental health care among adults during the COVID-19 pandemic - United States, August 2020-February 2021. Morbidity and Mortality Weekly Report, 70(13), 490-494. https://doi.org/10.15585/mmwr.mm7013e2

Watanabe, N., Stewart, R., Jenkins, R., Bhugra, D. K., & Furukawa, T. A. (2008). The epidemiology of chronic fatigue, physical illness, and symptoms of common mental disorders: A cross-sectional survey from the second British National Survey of Psychiatric Morbidity. Journal of Psychosomatic Research, 64(4), 357-362. https://doi.org/10.1016/j.jpsychores.2007.12.003

World Health Organization. (2017). Global diffusion of eHealth: Making universal health coverage achievable: Report of the third global survey on eHealth. https://apps.who.int/iris/handle/10665/252529

Yu, L., Scott, W., & McCracken, L. M. (2020). Change in fatigue in acceptance and commitment therapy-based treatment for chronic pain and its association with enhanced psychological flexibility. European Journal of Pain, 24(1), 234-247. https://doi.org/10.1002/ejp.1487

Zahed, A., Ghalilo, K., Abolghasemi, A., & Narimani, M. (2009). The relationship between emotion regulation strategies and interpersonal behavior among substance abusers. etiadpajohi, 3(11), 99-114. http://etiadpajohi.ir/article-1-422-en.html [Persian]

Zahiri, S., Dehghani, A., & Izady, R. (2018). The effectiveness of acceptance and commitment therapy (ACT) enriched with compassion focus therapy (CFT) for high school males obsession with obsessive-compulsive disorder. Journal of Psychological Studies, 13(4), 93-108. 93-108. doi: 10.22051/psy.2018.15195.1401 [Persian]