

## The Effectiveness of Acceptance and Commitment Therapy on Self-care Behavior and Hope in Patients with Irritable Bowel Syndrome in Isfahan, Iran

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### Quantitative Study

#### Abstract

**Background:** Irritable bowel syndrome (IBS) is one of the most common gastrointestinal disorders. The aim of this research was to evaluate the effectiveness of acceptance and commitment therapy (ACT) on self-care behavior and hope in patients with IBS.

**Methods:** The present study was conducted with an experimental and pretest-posttest design. The statistical population of this study included all patients with IBS referring to health centers in Isfahan, Iran, from June to September 2012. The research sample consisted of 60 individuals chosen using easy sampling method. The participants were divided into the experimental and control groups (30 individuals). The evaluation instruments included the Self-care Behavior Questionnaire and Snyder Hope Scale (SHS). The pretest was performed in both groups before the intervention. The experimental group then took part in the 8 sessions of intervention. After the intervention, posttest was conducted in both groups. Data analysis was performed using multivariate analysis of covariance (MANCOVA) and one-way analysis of covariance (ANCOVA).

**Results:** The mean (SD) age of the experimental and control group participants was 33.5 (6.90) and 34.76 (5.19) years, respectively. The results showed that the mean (SD) of the self-care score increased from (49.11) to 49.7 (74.7) in the posttest ( $P > 0.001$ ), but the mean (SD) of the self-care score in the control group (6.9) was 9.50 in the pretest and (51.9) in the posttest, which was 3.3%. This difference between the groups was not statistically significant ( $P < 0.05$ ). The mean (SD) of the hope score of the experimental group increased from (3.6) in the pretest to 1.36 (35.4) in the post-test ( $P < 0.001$ ). The mean (SD) of the hope score in the control group was 26.4 (4.9) in the pretest and 8.28 (6.21) in the posttest; this difference was not statistically significant ( $P < 0.05$ ).

**Conclusion:** It can be concluded that in people with IBS, ACT is effective on self-care activities and hopefulness.

**Keywords:** Acceptance and Commitment Therapy; Self-care behavior; Hope; Irritable bowel syndrome

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## Introduction

Irritable bowel syndrome (IBS) is recognized as one of the most severe psychosomatic conditions in the field of gastrointestinal disorders. It is characterized by stomach pain and alterations in bowel movements, which are treated in the absence of pathological conditions. The prevalence of IBS in the population is high and is estimated to be between 7.1 and 20% (Bohn et al., 2015). IBS may present as one of three clinical forms. The patient with spastic colic complains of chronic abdominal pain and constipation. The symptoms in patients with chronic diarrhea are intermittent and often painless, and they have both clinical manifestations mentioned above and alternately suffer from constipation and diarrhea (Allen, Clarke, Cryan, Quigley, & Dinan, 2017). IBS usually begins in late adolescence or early adulthood, and the ratio of male to female affection is 1 to 2 (Cenac et al., 2015). In Iran, it is considered as one of the most common diagnoses among outpatients referred to specialized clinics (Ganji, Safavi, Nouraei, Naseri Moghadam, Merat, Vahedi, 2006). The relatively high prevalence of IBS and high co-occurrence of this disorder with psychological problems have encouraged researchers to evaluate the effectiveness of various psychological therapies on this disorder (Sundin et al., 2015).

The self-care intervention involves empowering people to correctly implement self-care programs (Avraham, Van Dijk, & Simon-Tuval, 2016). Self-care is defined as a regulatory function of humankind that is used to provide and maintain the necessary equipment to survive and maintain physical and mental function and growth within the natural and proportional range of life and performance comprehensiveness (Dionne-Odom et al., 2016). The main goal of self-care interventions is to help patients improve the quality of self-care. This kind of intervention, which is mainly performed in the context of the relationship between the nurse and the patient, evaluates individuals' potential for self-care, trains them in appropriate care skills, and is a good communication skill (Chen, Fan, Belza, Pike, & Nguyen, 2017). In addition, it gives people the hope for flexibility, vitality, and the ability to dispose of the problems that life imposes on them, and increases life satisfaction (Webb, 2013). Hope has many effects on patient adjustment (Lepherd & Graham, 2016). The positive effects of the structure of hope on physical and mental health have been studied while there has been growing attention toward the structure of hope (Ginevra, Sgaramella, Ferrari, Nota, Santilli, & Soresi, 2017). The role of hope in patients' lives is also seen as a positive factor contributing to the growth and improvement of human quality of life (QOL) (Malinowski & Lim, 2015).

There are various treatments to improve patients' self-care and hopefulness behaviors; acceptance and commitment therapy (ACT) is considered as one of these strategies. ACT is considered as one of the most common types of emotional acceptance and flexibility therapy. It is rooted in a philosophical theory called functional contextualism, which is based on a research program on language and cognition called the theory of the framework of mental relationships (Livheim et al., 2015). The aim of this therapeutic method is to help clients achieve a more valuable and satisfying life through increasing psychological resilience, and it consists of the 6 central processes of cognitive defusion, acceptance, connection with the present time, self as a context, values, and committed action that lead to psychological resilience (Bricker et al., 2014). The cognitive defusion process is aimed at preventing cognitive fusion. In cognitive fusion, the individual considers him/herself, the self, and his/her thoughts as a fused entity. Cognitive defusion is to accept that our thoughts are separate from us, and there is nothing temporary more than private events.

Acceptance is creating a space for unpleasant feelings, sensations, desires, and other private experiences without trying to change them, escape from them, or pay attention to them again. Communication with the present moment is the complete awareness of the experience of the here and now with openness, curiosity, recognition, concentration, and full attention to what is going on (Hulbert-Williams, Storey, & Wilson, 2015). Self-observation is self-awareness, which does not change and is always present and resistant to injury. These phenomena change, but the person himself is continually constant. Commitment values and actions mean that a person recognizes what is most important and profound to him/her, sets goals accordingly, and acts committedly and effectively to achieve them (Trompetter, Bohlmeijer, Veehof, & Schreurs, 2015; Hacker, Stone, & MacBeth, 2016). Such problems are eliminated by providing tolerance and dedication treatment to people with IBS. The goal of this research was therefore to evaluate the effectiveness of recognition and dedication counseling on self-care and positive actions in people with IBS.

## **Methods**

The present research was a clinical trial. The study population included all patients with IBS who had been admitted to medical centers in Isfahan, Iran, between June and September 2017. The survey was conducted on 30 patients chosen through voluntary screening and randomly divided into trial and control groups. The inclusion criteria were patient's willingness to participate in the research, definitive diagnosis of IBS, and a minimum education of high school diploma. The exclusion criteria were a history of psychiatric illness, severe physical illness (such as cancer), and drug addiction. The research plan was explained to the extent that was understandable to the subjects. In addition, the rights of the participants were protected, the confidentiality of their information and their privacy were maintained, and they were not harmed.

*Self-care Behavior Questionnaire:* This questionnaire was used by Conn, Taylor, and Wiman (1991) in 1991) and Coyle (2012) in 2009, and was evaluated by Niakan, Paryad, Kazemnezhad, and Sheikholeslami (2015) in Iran. The tool consisted of 20 items scored on a 4-point Likert scale, with a score of 1 indicating a low probability and a score of 5 indicating a high probability of following self-care behaviors. This tool consists of the dimensions of physical activity, healthy diet, stopping smoking, using a medication regimen, and adjusting the effects of stressful variables. The minimum and maximum total score of the scale is 20 and 100, respectively. A score of 20-79 indicates undesirable self-care behavior, and a score of 80-100 indicates desirable self-care behavior. The reliability of the questionnaire was determined through calculating Cronbach's alpha coefficient of the whole instrument. The reliability of the subscales of dietary follow-up, stopping smoking, physical activity, using a medication regimen, and adjusting the effects of stressful variables after hospital discharge was approved with a Cronbach's alpha of 0.95, 0.98, 0.81, 0.92, and 0.80, respectively. The validity and reliability of the whole scale were 0.79 and 0.86, respectively.

*Snyder Hope Scale:* The Snyder Hope Scale (SHS) is a self-report scale developed by Snyder et al. in 1991 to measure hope. It consists of 12 phrases, 4 phrases for measuring factor thinking, 4 phrases for measuring strategic thinking, and 4 phrases for deviance. The SHS includes the 2 subscales of factor and strategy. Numerous studies have approved the reliability and validity of this scale (Gardner & Moore, 2012). The internal consistency of the whole scale was 0.74-0.84, and its test-retest reliability was 0.80, and the periods longer than 8-10 weeks are even higher. The

internal consistency of the factor subscale is 0.71-0.76, and the strategic subscale is 0.63-0.80. Lin et al. (2017) reported that the correlation of this questionnaire with Beck's Despair Questionnaire was -0.51, and with Beck's Depression Inventory (BDI) was -0.42, thus indicating the validity of this questionnaire. The reliability of this scale was calculated as 0.79 using Cronbach's alpha .

**Results**

In the present study, 30 participants underwent the tolerance and participation counseling group and 30 participants were tested in the study group before and during preparation using testing methods. The mean (standard deviation) age of the study group and control group participants was 33.50 (6.90) and 34.76 (5.19) years, respectively. The two groups did not significantly differ in terms of average age ( $P < 0.050$ ;  $t = 0.037$ ). Descriptive statistics of the research variables in the pretest and posttest are presented in table 1.

The results presented in table 2 show a significant difference between the experimental and control groups in terms of at least one of the predictors (self-care or hopefulness behavior) in pretesting the significance rates of all studies ( $P < 0.0001$  and  $P < 0.710$ ).

The study and control groups differed significantly different in terms of hope in the pre-testing control group ( $P < 0.0001$  and  $F = 28.38$ ). This effect or discrepancy is 0.54. Moreover, 54% of individual variations in the posttest hope score was correlated with the effect of cognitive-behavioral therapy.

**Discussion**

This research was conducted to evaluate the effectiveness of ACT on self-care and hopefulness in people with IBS. ACT has been shown to influence self-care and luxury behaviour in people with IBS. These findings are consistent with the findings of Mirsharifa, Mirzaian, and Dousti (2019) and Wynne et al. (2019), who found that ACT was effective on depression, psychological capital, and psychological stress in patients with IBS.

The results indicate that ACT has a significant effect on self-care and self-help. ACT therefore affects and improves self-care and hopefulness. As a result of ACT, people report high rates of satisfaction, suggesting that psychological acceptance and versatility play an important role in selfcare behaviors. All of them are considered as the cause of anxiety, i.e., every human being has a set of abilities and through gaining knowledge of the extent of these talents the goals of one's life are determined. As previous studies have found, increasing ACT will improve self-care behavior through its training. People learn to accept their feelings without hesitation during ACT and free themselves from the annoying content of their thoughts by focusing more consciously on their thinking process and associating it to goal-based action (Wynne et al., 2019).

**Table 1.** The mean ± standard deviation of scores of research variables in the pretest and posttest

Variable	Group	Posttest	Pretest	P-value
		Mean ± SD	Mean ± SD	
Self-care	Control	49 ± 11.4	74.7 ± 17.8	0.0001
	Experimental	50.9 ± 6.9	51.3 ± 6.9	0.54
Hopefulness	Control	26.1 ± 4.3	35.7 ± 4.4	0.0001
	Experimental	26.4 ± 4.9	26.8 ± 6.1	0.30

SD: Standard deviation

**Table 2.** The results of the multivariate analysis of covariance on the mean posttest of hope and self-care behavior scores of experimental and control groups with the pretest of the control group

Test	Value	df hypothesis	df error	F	P-value	Eta square
Pillai's Trace	0.48	2	22	51.07	0.0001	0.48
Wilks' Lambda	0.01	2	22	51.07	0.0001	0.48
Hotelling effect	54.71	2	22	51.07	0.0001	0.48
Roy's largest root	54.71	2	22	51.07	0.0001	0.48

df: Degree of freedom

Acceptance, therefore, is especially necessary when one's unpleasant experience cannot be changed, such as the experience of lifelong IBS (Hayes, Pistorello, & Levin, 2012).

In addition, ACT encourages people to connect with and be fascinated by the true values of their lives. Avoiding experiences creates a traumatic process that contributes to the creation and expansion of conflicts (Buhrman et al., 2013). Acceptance leads to ineffective debates about reopening purity and fundamental change and opens up space for people to think their thoughts and feel their feelings without trying to change. These exercises help individuals to directly deal with their stressful events, especially during therapy sessions, and experience their undesirable thoughts and emotions instead of controlling or fighting with them. Not only does one have a complete experience of thoughts and emotions, but it also allows the other party to have such an experience. ACT increases body image anxiety (McCracken & Gutierrez-Martinez, 2011).

In future research, it is suggested that under controlled experimental conditions psychotherapy methods effective on IBS be compared. The results of this study show that the effectiveness of psychological therapies can increase when used in conjunction with medical therapies and can be effective in reducing the duration of drug treatments. It should also be noted that due to the existing limitations, the results of this study can be generalized only within the community.

### Conclusion

It can be concluded that in people with IBS, ACT is effective on self-care activities and hopefulness.

### Conflict of Interests

Authors have no conflict of interests.

**Table 3.** The results of one-way analysis of covariance in the multivariate analysis of covariance text on posttest mean scores of hopefulness and self-care behavior of experimental and control groups with the pretest control group

Variable	Source of changes	Total squares	df	Mean squares	F	P-value	Eta square	Statistical power
Self-care	Pretest	3558.65	1	3558.65	293.94	0.0001	0.88	1.00
	Control	343.60	1	343.60	28.38	0.0001	0.43	1.00
	Error	447.94	27	12.10				
Hopefulness	Pretest	302.79	1	302.79	49.06	0.0001	0.57	1.00
	Group	270.43	1	270.43	43.81	0.0001	0.54	1.00
	Error	228.35	27	6.17				

df: Degree of freedom

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