

# COMPARISON OF THE EFFECTIVENESS OF MINDFULNESS-BASED COGNITIVE THERAPY AND ACCEPTANCE AND COMMITMENT THERAPY ON HEALTH-PROMOTING BEHAVIORS IN PATIENTS WITH ULCERATIVE COLITIS

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## Abstract

**Background and Aim:** Gastrointestinal symptoms are the most common complaints among in public and domestic clinics. Today, due to urbanization and development of countries, inflammatory bowel diseases are increasing, which can greatly affect on the quality of life in the patients. Health-promoting behaviors was an important variable in determining the effects of the disease on the lives of patients with ulcerative colitis. Psychotherapy was a useful intervention for this patients. Therefore, the aim of this study was to comparison the effectiveness of mindfulness-based cognitive therapy and treatment based on acceptance and commitment on the promoting health lifestyle in patients with ulcerative colitis.

**Method:** The present study was a quasi-experimental with pre-test-post-test design with a control group. The study population was people with ulcerative colitis in 1400. By purposive sampling method, 36 person them people met the inclusion and exclusion criteria in 3 groups of 12, one group of cognitive therapy based on mindfulness, the second group of treatment based on Acceptance and commitment and the third group was the control group. 2 experimental groups, were exposed to mindfulness-based cognitive therapy and acceptance and commitment therapy in 8 sessions of 90 minutes, but the control group did not receive treatment. Two months later was done the follow up stage. To gather information was used From the Health Promoting Lifestyle Questionnaire Walker & et al. Data were analyzed using spss 23 software And by multivariate analysing of covariance (ANCOVA) and the follow up stage was used analysing variance with repeated measurements.

**Results:** The results of multivariate analysing of covariance and analysing variance with repeated measurements showed that both interventions of mindfulness-based cognitive therapy and acceptance and commitment-based therapy had a significant effect on health-promoting behaviors in patients with ulcerative colitis and acceptance-commitment therapy had a greater effect on improvement health-promoting behaviors than mindfulness-based cognitive therapy.

**Conclusion:** Cognitive therapy based on mindfulness and on acceptance and commitment therapy increased health-promoting behaviors in patient with ulcerative colitis. The using of these interventions is recommended to improvement the health-promoting lifestyle in these patients.

**Keywords:** Mindfulness-Based Cognitive Therapy, Acceptance and Commitment Therapy, Health Promoting Behaviors, Ulcerative Colitis.

## INTRODUCTION

IBD, comprising Crohn's disease and ulcerative colitis, is a chronic immunologically mediated disease at the intersection of complex interactions between genetics, environment and gut microbiota(1). The diseases are chronic disabling conditions, characterized by an unpredictable course with flare-ups and periods of remission, that frequently affect young people and require lifelong medical follow-up and treatment(2). The natural history of IBD is characterised by periods of remission and relapse. While some patients may experience long periods of remission, others may experience a rather aggressive course with rapid disease progression. In UC, mucosal inflammation is limited to the colon, typically extending proximally from the rectum(3). These two diseases often appear in the third decade of a person's life, although it can start at any age. 25% of people get it before the age of 18 (4). Inflammation in ulcerative colitis often occurs in the rectum and end of the colon, but can also affect the entire colon (5). That is a chronic, recurrent disease of the large intestine and. This causes disability such as bleeding in the rectum. It is characterized by diarrhea, severe cramps and weight loss(6). Other symptoms include abdominal pain and bloody diarrhea with or without mucous, overt or covert rectal bleeding, fever, and weight loss (7). UC is controlled by a variety of anti-inflammatory and immunosuppressive drugs such as aminosalicylates, corticosteroids, anti-tumor necrosis agents (anti-TNF), and dolizumab, vesticumab, and tonacitinib (6). Physicians and researchers believe that psychological and physical factors are related in IBD. In addition, UC is characterized by severe gastrointestinal symptoms and significantly impairs patients' quality of life and affects mental, physical, sexual, and social functions (8)Factors that appear to affect quality of life in ulcerative colitis include the course of the disease (rate, severity, and pattern of recurrence), prescribed treatment (efficacy,

side effects, and drug loading) and disease-related factors, including demographic characteristics. As we expect, disease activity has been shown to be the most important factor in lifestyle (9). Lifestyle under the heading of all behaviors that are under the control of the person or affect a person's health risks are defined A holistic approach suggests that health protection behaviors and health promotion behaviors may be considered as two components of a healthy lifestyle(10). According to the theorists, health-promoting behaviors have positive effects on quality of life, so that people with health-promoting behaviors are healthier and have less burden of disease and disability. According to the theorists, health-promoting behaviors have positive effects on quality of life, so that people with health-promoting behaviors have been healthier and have less burden of disease and disability (11, 12). Therefore, creating health-promoting behaviors can improve the quality of life and thus prevent and even treatment physical problems(13). Psychotherapy is a useful intervention for inflammatory bowel patients. The goal of psychotherapy is to influence the patient's physical course, mental state, or quality of life related to the patient's health (14). One of the third wave therapies that has recently been widely used in physical and mental health problems is acceptance and commitment therapy. acceptance and Commitment therapy has six central processes: acceptance, defusion, self as content, contact with the present moment, values, and committed action. The goal of mindfulness based on acceptance and commitment is to create a rich and meaningful life while One accepts the inevitable suffering contained in it. Mindfulness based on acceptance and commitment (meaning action) is an interesting acronym because it is about taking effective action that is driven by our deepest values while we are fully prepared and committed. It is only through conscious action that we can build a meaningful life. Of course, as soon as

we start trying to make such a life, we will face all kinds of obstacles in the form of unwanted and undesirable inner experiences (thoughts, imaginations, feelings, bodily sensations, impulses and memories). Mindfulness based acceptance and commitment to manage these private experiences teaches us the effective skills of mindfulness (15). In the last two decades, a large number of mindfulness-based interventions and therapies have emerged, including mindfulness-based cognitive therapy. Mindfulness-based cognitive therapy is designed by Segal et al. In eight group sessions (one session per week) kabat-zinn (MBSR) - based stress reduction program first time to prevent relapsing depression (14). For years, the main endpoints of IBD treatment had been clinical remission and response, followed by biomarker normalization and mucosal healing. In the last decades, different therapies have been proved to be effective to treat IBD and the use of patient reported outcome (PRO) have become more relevant (2). Therefore, the purpose of this study is the effectiveness of ACT therapy and MBCT therapy on the psychological component of these patients (health-promoting behaviors) in order to identify the effects of these two treatments, to provide comprehensive improvement for the patient and not just his specific disease.

carvalho, skvarce, Barbosa, tavares, santos & trindade (2021) In their research concluded that ACT and CFT are cost-effective approaches to promote health of individuals with CI (16). In research Esmi, Paivastegar, Parhoon & Kazemi Rezaei (2019), according to the results and its effectiveness mechanism acceptance commitment therapy can have good therapeutic consequences on quality of Life, mental health and Self-care behavior in breast Cancer Patients (18). Research of mortezaei shemirani, tajari, sanaei Zak, soodagar and meschi (2019) emphasizes effectiveness of group therapy based on commitment and acceptance on life habits, disturbed eating behavior and health-promotion lifestyle is persistent in women with obesity (19). Research of dindo, van lieuw & arch (2017) showed that ACT helps different patient populations in across a broad range of therapeutic settings including: mental

health-primary care and specialty medical clinics (20). The research of baradaran, zare, alipour and farzad (2016) indicates the effectiveness of acceptance and commitment therapy on cognitive fusion and physical health indicators in patients with essential hypertension (21). Mohaddesi, Razavi, Khalkhali, Bahadori and Saei (2016) in their researchs showed that lifestyle counseling improves promotion health behaviours in diabetic mothers referred to health centers (22). The research of hashemi nosratabad, rastgar, farajzadeh, khanjani and mashinchi Abbasi (2015) also indicates the effectiveness of mindfulness-based Stress Reduction on Persistence of caring behaviors in mother's children with chronic illness (23).

## Method

The present study was a quasi-experimental with pre-test-post-test design with a control group. The study population was people with ulcerative colitis in 1400. By purposive sampling method, 36 person them people met the inclusion and exclusion criteria in 3 groups of 12, one group of cognitive therapy based on mindfulness, the second group of treatment based on Acceptance and commitment and the third group was the control group. 2 experimental groups, were exposed to mindfulness-based cognitive therapy and acceptance and commitment therapy in 8 sessions of 90 minutes, but the control group did not receive treatment. After preparing the treatment protocol, conducting initial evaluations of patients with ulcerative colitis, selecting and matching participants with mentioning the initial description of the research and receiving their consent to participate in the sessions, the health-promoting style was given to 3 groups to answer it. After the pre-test, two experimental groups received 8 sessions (90 minutes each session), group 1 received mindfulness-based cognitive therapy and group 2 received acceptance and commitment therapy once a week, and the control group waited for treatment. In order to comply with ethical principles, participants were allowed to cancel their work if they did

not want to continue participating in the study. Two days after the end of the sessions done post test. the exclusion criteria included: absence of more than 2 sessions in the treatment process, deterioration of the subject during the study and infection covid 19 disease. method of letter Mindfulness-based cognitive therapy and commitment-based therapy are listed in the following tables:

Table1: mindfulness-based cognitive therapy protocol(Williams&segal,2002)

Session 1: The participants were instructed in the automatic guidance of the physical check technique and the physical check training video and practice sheets were distributed for doing at home.
Session 2: confronting the obstacles of mindfulness was performed in a sitting position. The practices of pleasant events during the week was explained and the relevant sheets were distributed.
Session 3: Breathing was performed with the presence of mind reviewing exercises, seeing and hearing exercises for 5 minutes and the walking technique was taught to the participants with general awareness and 3-minute breathing open up. Participants' booklets and breathing instructional videos were given to the students with the mindfulness.
Session 4: Staying in the present moment, reviewing exercises, mindfulness, awareness of breathing, body, voice and thoughts, as well as 3 minutes open uping breath regularly and 3 minutes of coping (when severe unpleasant feelings) were practically performed.
Session 5: Permission to attend,reviewing exercises and siting mindfulness- Awareness of breathing, body, sounds, thoughts and the importance of acceptance and its characteristics were discussed. Emphasizing the importance3minute coping breathing open up with the booklets of the fifth session were distributed.
Session 6: Thoughts are not facts. Recognizing automated daily activities, feeling useless with disinterest in previous activities, escaping or avoiding anxious situations, as well as explaining the ways in which they can see differently their thoughts was the goals of the sixth session.

Session 7: Taking care self,previous techniques in this session was practiced in such a way that it is used as a daily routine and in fact mindfulness becomes of a person's lifestyle.

Session 8: Reviewing the Past gleaning and Using What We Have Learned In this session, in addition awareness of small changes in mood, was discussed and planned how continue the mobility and order learned in the last 7 sessions after the ending sessions.

Table2: Acceptance and commitment therapy protocol for interpersonal problems(saavedra,2008)

Session 1: After familiarizing the members with each other and with the therapist about the concepts of thinking, feeling and behavior and then about the basic principles, the goals of the intervention and the importance of homework and exercises were explained.
Session 2: about experiential avoidance and practice of creative hopelessness and patients' underlying belief about change was explained.
Session 3: about principle of acceptance and its strategies suppression and mindfulness exercises. At the end was given the presentation.
Session 4 and 5: Reviewing the previous contents in five minutes and was explained about contacting with the present moment and mindfulness and strategies of defusion and cnotexture by mentioning allegories.
Sixth and Seventh Sessions: Reviewing the previous sessions on strategies for clarifying and measuring values and committed action values-congruent were explained by presenting exercises and allegories.was given presentation.
Session 8: Reviewing the content of the previous sessions, group discussion on the problems that the members had in relation to the previous exercises, paying attention to the patterns of committed action and presenting a suggestion about continuing the exercises in Rormerre's life.

Data were analyzed using spss 23 softwar And by multivariate analysising of covariance(ANCOVA)and at another time and

in the follow up stage(2 months after post-test) The mentioned test was performed.in the follow up stage was used analysing variance with repeated measurements. In this study, the Health Promoting Style Questionnaire (HPLPII) was used.

HPLPII is a modified version of HPL P developed by Walker et al. That measures health-promoting style by focusing on innovative and perceptual work, which works to maintain or enhance health, self-fulfillment, and personal satisfaction(24). The Health Promoting Lifestyle Questionnaire includes 52 questions in six dimensions of nutrition, physical activity, stress management, mental development, health responsibility and interpersonal communication Its response range is of the Likert type, with 4 answers for each option, which are scored never (1), sometimes (2), before (3) and always (4). A separate score can be calculated for each dimension. Health responsibility score (9-38), physical activity (8-34), eating habits (9-38), spiritual growth (9-38), interpersonal communication (9-38) and stress management (8-34). To obtain The total score of the questionnaire Gathers together scores of all the questions. The lowest score is

52 and the highest is 208. The higher the score, the higher the health-promoting style. In the study (Zaidi et al., 2011), the validity of the Walker Health Promoting Lifestyle Questionnaire was confirmed (25). The reliability of the questionnaire was also calculated using Cronbach's alpha measurement method(26). For the HPLP II instrument, Walker and Pollerki reported Cronbach's alpha of 0.94, and for its six subfields, they ranged from 0.79 to 0.94. Also, the reliability of the test retest, three-week for the whole instrument was equal to 0.89 (27).

### findings

The study was done comparison of the effectiveness of mindfulness-based cognitive therapy and acceptance and commitment therapy on health-promoting behaviors in ulcerative colitis patients. As can be seen in the table, the mean of health-promoting behaviors in the post-test phase in the groups of cognitive therapy based on mindfulness, acceptance and commitment therapy and control respectively are , equal to:144/152/75,138/33.

Table 3: Average and standard-deviation in three group in three stage

Follow-up		Post-test		Pre-test		group	variable
Standard-d	a	Standard-d	a	Standard-d	a		
17/27	144/25	17	144	16/63	136/92	mbct	Promotin g-health
18/27	151/83	18/75	152/75	17/10	138/92	act	
18/82	139/08	18/39	138/33	19/94	138/75	control	

With Shapiro-Wilk test, it was found that the levels of probability (P value) in the variables of health-promoting behaviors, in the pre-test, post-test and follow-up stages, separately for the experimental and control groups were equal to 0/065,0/0115,0/077and are Larger than the error level equal to0.05.

According to the p of value and the non-rejection of the null hypothesis, the data distribution is considered conforming with the normal distribution. Therefore,was used the parametric test of covariance for testing the research hypotheses. According to Lovin test results, the value of F (0.979) and the significance level (0.386)is not significant,therefore Equality of variances Is

established and covariance is possible. The data related to the testing hypothesis of homogeneity of slopes showed that the interaction between the pretest of health-promoting behaviors and the group is not significant( $f(1,30)=1/06, p=0/358$ ). The non-significance of the interaction indicates that the data support the regression slope hypothesis. Therefore, covariance is performed only to test the effect of the main variables of post-test of health-promoting behaviors and the group, That is mean Average of the population in the experimental and control groups the same? The results of analysis of covariance of health-promoting behaviors in the experimental and control groups with eliminating the interaction are shown in the table:

Table 4: Summary of analysis of covariance of promotional behaviors in experimental and control groups by eliminating interaction

Eta-s	sign	F	ms	df	ss	sse
0/936	0/001	467/55	10080/96	1	10080/96	Covariate-b
0/639	0/001	28/29	609/98	2	1219/96	
			21/56	32	689/95	Error
				36	769227	Total

As can be seen, the results of multivariate analysis of variance for promoting health behavior show that there is a significant difference between three groups, respectively, for the promoting health behaviors (Eta=0/639,p=0/001,f=28/29).in other words, there is a significant difference between the promoting health behaviors of the experimental groups and the control group. Thus, considering that there is a significant difference between the mean of the three experimental and control groups in the variable of promoting health behaviors, the research hypothesis is confirmed and the null hypothesis is rejected that there is no significant difference between the mean of the promoting health behaviors of the three groups. A paired sample test was performed to examine the scores of which groups differ in the dependent variables in the post-test stage. The results are reported in the table:

Table 5: bonferroni test to comparison three groups in research variable in post-test stage

Sig	Mean-difference	group	group	variables
0/003	-6/80	ACT	MBCT	Promoting behavior
0/001	7/45	control	MBCT	
0/001	14/25	control	ACT	

The results of paired sample test for the post stage showed that the mean difference scores of the promoting behaviors is significant the mindfulness-based cognitive therapy group and the acceptance and commitment-based therapy group with the control group and the acceptance and commitment therapy group with the mindfulness-based cognitive therapy group.

## discussion

The aim of this study was comparison of the effectiveness of mindfulness-based cognitive therapy and acceptance and commitment therapy on health-promoting behaviors in patients with ulcerative colitis. The results of analysis of covariance showed that in the post-test phase there was a significant difference between the health-promoting behaviors of the experimental and control groups. That's means that both mindfulness-based cognitive therapy interventions and acceptance and commitment-based therapy have had a significant effect on health-promoting behaviors in patients with ulcerative colitis. Also, there was a significant difference between the two interventions mindfulness based cognitive therapy and acceptance and commitment therapy to health-promoting behaviors and acceptance and commitment therapy had a greater than impact mindfulness-based cognitive therapy on improving health-promoting behaviors.in explaining the effectiveness of mind-based cognitive therapy on health-promoting behaviors in ulcerative colitis patients, it can be said that one of the important aspects of mind-based cognitive therapy is that people learn to cope with negative emotions and thoughts and experience mental events in a positive way(28). mindfulness helps patients by eliminating or reducing the emotions caused by the disease. mindfulness increases the self-control, self-regulation and self-monitoring of ulcerative colitis patients on their behaviors by controlling moment-by-moment and non-judgmental awareness in a step-by-step manner and he Guide Towards recovery. Mindfulness also increases physical control and alertness of the body, which may lead to improved physical mechanisms and improved self-care.research of nosrstabad&et al (2015 )is confirmation this issue. Similar to traditional relaxation training,

mindfulness meditation is associated with increased parasympathetic activation, which can lead to deep muscle relaxation, reduce tension and arousal, reduce pain, and ultimately enhance patients' health-related lifestyles(29&30). The study of nosratabad&et al(2015)Indicates the effectiveness of mindfulness-based intervention on Persistence of caring behaviors in mother's children with chronic illness which confirms this matter. also research findings congruent with Rubins&Roth's research , this study was conducted to investigate the effectiveness of mindfulness-based stress reduction on general health and quality of life-related health and The results showed that mindfulness-based cognitive therapy is effective on general health and quality of life related to quality of life in cancer patients and increases general health and health related to lifestyle. (31). The results of research by Carvalho&et al. (2021), esmi&et al (2019), Mortezaei&et al (2019),dindo&et al (2017), Mohaddesi et al (2016), indicate the effectiveness of acceptance and commitment therapy is congruent with research findings. One of the things that is emphasized in commitment and acceptance therapy that it encourages clients to be committed to changes in their behavior(32). Clarifying what is really important for you and is rooted in the depths your heart and how you want to be in this life and recognizing what is more important for the person to set goals based on it and act committed and effective to achieve them. Thus, since one of the most important steps in acceptance and commitment therapy is taking responsibility for the treatment by the clients,counseling based acceptance and commitment by giving the appropriate task and working on values, flexibility, transparency values and discussion about the fact that change is possible, as well as the successful performance of various exercises can activate people's responsibility for their health. As a result, it was seem that the superiority of acceptance and commitment therapy in return mindfulness-based cognitive therapy is the same Therapeutic tip. This method of treatment believes that client was seen never as failed, damaged, or frustrated, an And the look of this is empowerment that makes available lifing

based values , richness, and meaning(33). The core processes of ACT cause the patient to accept private experience instead of control and instead of responding to it and he do what is important to him in life and in line with his values. In this case, the person's behavioral treasury in the presence of scary events increases and Leads to a significant reduction in thought and action Therefore, in the ACT method, all efforts to create and nurture a life based on value,wich according to the patient is helped to find the desired way of living and to practice that way(34).

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