

Original Article

The Effectiveness of Brief Cognitive-Behavioral Therapy on Rumination and Experiential Avoidance in Patients with Irritable Bowel Syndrome

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Background and Aim: Among the physical problems, irritable bowel syndrome can affect the patient's psychological behavior, which makes it necessary to reduce this problem by using appropriate psychological treatments. Therefore, this study aimed to investigate the effect of brief cognitive-behavioral therapy on rumination and experiential avoidance in patients with irritable bowel syndrome.

Materials and Methods: The research method is quasi-experimental with a pre-test, post-test, and control group with a two-month follow-up. The statistical population was all men with irritable bowel syndrome referred to Moheb Hospital in Tehran in 2024. The participants were 40 patients selected through convenience sampling and randomly assigned to experimental and control groups (20 people in each group). Brief cognitive-behavioral therapy was applied to the experimental group for 10 sessions (one 1-hour per week). The control group did not receive any intervention. In addition to the researcher-made demographic information checklist, the Ruminative Response Scale (RRS) and the Experiential Avoidance Questionnaire were used to collect data. Data were analyzed using repeated measures analysis of variance (ANOVA).

Results: The mean rumination score and its dimensions in the experimental group improved significantly after the intervention compared to the control group ($P < 0.05$). Brief cognitive-behavioral therapy was beneficial in reducing experiential avoidance and its dimensions in the experimental group compared to the control group ($P < 0.05$), and the effects of this program on dependent variables sustained during the two-month follow-up period ($P < 0.05$).

Conclusion: The results showed that brief cognitive-behavioral therapy can improve rumination and experiential avoidance in patients with irritable bowel syndrome. We can conclude that by enhancing the techniques of this treatment, we can hope for further improvement in these patients' psychological and behavioral functions.

Keywords: Brief cognitive-behavioral therapy, Experiential avoidance, Rumination, Irritable bowel syndrome

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Introduction

One of the most common and complicated functional gastrointestinal diseases is irritable bowel syndrome, which is characterized by chronic abdominal pain, changes in bowel habits, and the absence of organic causes for these symptoms (1). This disease is the source of 25 to 50 percent of referrals to gastroenterologists and is the second leading cause of absenteeism from work after the common cold. Abnormal intestinal motor function, visceral hypersensitivity, neural processing of visceral stimuli, gastrointestinal infections, mild inflammation, and psychosocial factors can contribute to the symptoms of this disorder (2). The prevalence of this disease in Iran has been reported to be 3.5 to 5.8 percent (3).

Some studies emphasize the role of psychological factors in irritable bowel syndrome. In parallel with the presence of psychological aggravating factors such as anxiety, depression, and stress caused by nervous stimulation, the symptoms of irritable bowel syndrome intensify (4). Therefore, it seems that psychological factors, including rumination, may play a role in the persistence and severity of abdominal symptoms of this syndrome, which makes patients with irritable bowel syndrome excessively visit healthcare centers (5). Ma et al. (6) also believe that rumination is an intrapersonal factor affecting the perception of stress in patients with gastrointestinal disorders. (7) also showed in a study that ruminative responses, distracting responses, and cognitive emotion regulation are significant predictors of biological stress indicators in patients with gastrointestinal cancer. Characteristics associated with rumination include negative feelings and symptoms of depression, negatively oriented thinking, ineffective problem-solving, inhibition of positive behaviors, irrational focus on harm, and increased perceived stress (8). Also, rumination increases the vulnerability of individuals to psychosomatic symptoms in medical patients. These thoughts enter consciousness involuntarily and divert attention from the subjects of interest and current goals (9).

People with irritable bowel syndrome who have rumination are less skilled at dealing with life roles after contracting the disease and its consequences.

They are, therefore, more likely to use strategies such as escaping or avoiding stressful situations. In contrast, patients with a high level of distress tolerance have a greater perceived capacity to cope with unpleasant events and emotions associated with the diagnosis of the disease and, as a result, resort to using experiential avoidance as a coping strategy less (10). In addition, the results of various studies have shown that chronic medical illnesses are commonly associated with fear and avoidance of internal experiences (11). This process causes avoidance behaviors and thoughts in affected individuals because these people, due to their traumatic experiences, attempt to reduce their anxiety sensitivities and ruminations by avoiding negative emotional experiences (3). In addition, avoidance behaviors are associated with digestive symptoms in people with irritable bowel syndrome (3). A few studies also suggest that experiential avoidance has a causal effect on the onset and persistence of psycho-emotional disorders in people with gastrointestinal diseases (12). In this regard, Kincaid (13) reported that experiential avoidance predicts mood and anxiety symptoms in a group of patients with gastrointestinal disorders. Another study also showed that experiential avoidance could predict symptoms of functional gastrointestinal disorders (14). Although numerous pharmacological and psychological treatments have been developed to treat the symptoms of irritable bowel syndrome, and these treatments have shown acceptable effects in various trials, the findings show that in most cases, these treatments have not been effective in reducing psycho-emotional symptoms that activate or perpetuate irritable bowel syndrome and patients remain with residual symptoms associated with the disorder, such as persistent negative thoughts and unsuccessful attempts to control symptoms; therefore, identifying effective treatments for these patients is essential (15, 16). On the other hand, among psychotherapy-based interventions, treatments derived from and related to cognitive and behavioral approaches have accounted for a significant percentage. It is consistent with the fact that despite recent advances in psychotherapy and prevention of the psychological and social consequences of chronic medical conditions, including those with digestive disorders, cognitive-behavioral therapies are still among the best-known treatments and have the best evidence in this field (17, 18). Brief cognitive

behavioral therapy, which is based on Beck's cognitive intervention and a condensed version of classical cognitive-behavioral treatment, was developed in 2012 based on Rudd's findings and has been increasingly used in various studies and among various clinical and normal populations to date with results indicating its effectiveness in reducing the psychological and emotional consequences of illness (19). In one of the most recent studies in this field, which focused on reducing suicide attempts in chronic medical patients, researchers concluded that people in the experimental group reported lower frequency and severity of suicidal thoughts after treatment compared to the control group (20). At the same time, research results show that training and treatment of patients with psychosomatic symptoms face numerous challenges, the nature of which is different from that of other chronic medical and mental health patients (21). For those with irritable bowel syndrome, two main issues are flexibility and short-termism, which are essential for successful treatment implementation. Both of these features are present in brief cognitive-behavioral therapy. These features are considered a strength of the current treatment, which is less emphasized in the classic version of cognitive-behavioral therapy (22). Also, in brief cognitive behavioral therapy, a special place is given to training skills based on emotion regulation and cognitive flexibility, which play a key role in most psychological and emotional vulnerabilities in psychosomatic patients. However, despite its high efficacy in use for patients with chronic medical conditions, the current treatment is still in its early stages and has been investigated in limited studies, and its usefulness needs to be investigated in further studies (21, 23). On the other hand, a review of the findings shows that over the last two decades, the prevalence of digestive disorders, including irritable bowel syndrome, has increased (1, 2). In Iran, a comprehensive national survey has not been conducted in this field, and there are no accurate statistics on the prevalence of the disease. However, the number of people visiting treatment clinics shows that irritable bowel syndrome is more prevalent than is thought. Given the numerous problems caused by this disease, a review of the research literature seems necessary to achieve the most beneficial treatments.

Therefore, this study aimed to investigate the effectiveness of brief cognitive-behavioral therapy on rumination and experiential avoidance in patients with irritable bowel syndrome.

Methods

This study was quasi-experimental with a pretest, posttest, and two-month follow-up design with two experimental and control groups. The study population consisted of all male patients with irritable bowel syndrome referred to the internal medicine clinic of Moheb Superspecialty Hospital in Tehran in 2024. To control for gender and also due to the tendency for greater cooperation among men, only male patients were selected. The sample size was determined by referring to Cohen's table, which determined that at a 95% confidence level, the effect size was 0.30, and the statistical power was 0.83 for each group of 15 people. However, due to the expected drop in sample size and to ensure greater generalizability of the results, the final sample size was 20 people in each group. In the first stage, 40 people were chosen using convenience sampling. In the second stage, this number was randomly assigned (by throwing dice) to an experimental group (20 people) and a control group (20 people). After coordinating with the internal management of the clinic of Moheb Hospital in Tehran, male clients with irritable bowel syndrome were identified, and the clinic's doctors were informed of the call for treatment sessions and the initial registration conditions through a notice. After registration, applicants were screened and selected from 78 men diagnosed with irritable bowel syndrome through a preliminary interview of eligible patients who scored one standard deviation below the mean in self-report questionnaires. Among these individuals, 40 were selected using a convenience sampling method, and considering the inclusion criteria (including willingness to participate in the research, age range of 23 to 50 years, having literacy to respond to the instruments, definitive diagnosis of irritable bowel syndrome based on the Rome-III criteria by a relevant specialist, having symptoms of the disease for at least six months and having relevant medical tests, not receiving concurrent psychotherapy or another psychological program, full participation in the designated treatment sessions, and

adherence to the treatment session schedule) and exclusion criteria (including suffering from other severe medical or psychological diseases, specific organic gastrointestinal disease, history of abdominal surgeries, presence of warning signs such as bloody diarrhea, weight loss and family history of malignancy, abuse of any type of drugs and alcohol, absence of more than one session from attending treatment sessions, and unwillingness to continue participating in treatment sessions). Then, they were randomly assigned into two equal groups: experimental (20 people) and control (20 people).

Materials

After the subjects were placed in groups, the experimental group received brief cognitive behavioral therapy according to the protocol developed by Rudd (24) for 10 sessions once a week, each lasting 1 hour (60 minutes). Table 1 summarizes the content of the therapy sessions. In this study, subjects were generally assured of compliance with research ethical considerations, such as confidentiality, anonymity of identity information, and data analysis. After obtaining written consent, the pre-test phase was conducted. The post-test was also carried out at the end of the intervention, and the follow-up period was two months after the completion of the treatment sessions. The following questionnaires were used to collect data.

Ruminative Response Scale (RRS)

Morrow and Nolen-Hoeksema (25) developed this self-report questionnaire, which has 22 questions with three subscales: expression (questions 21, 20, 12, 11, and 7), reflection (questions 16, 15, 13, 10, and 5), and depression (questions 22, 19, 18, 17, 14, 9, 8, 6, 4, 3, 2, and 1). The questionnaire is scored on a 4-point

Likert scale (almost never = 1 to almost always = 4), with a higher score indicating more rumination (26). The tool developers calculated its construct validity using factor analysis as 0.82 and its reliability as 0.91 through Cronbach's alpha coefficient (9). In the study by Abu Torabian and Sajjadian (8), its reliability was reported with a Cronbach's alpha coefficient of 0.80.

Multidimensional Experiential Avoidance Questionnaire

This self-report instrument was developed by Gomez et al. (27) and has 62 questions with six subscales: behavioral avoidance (questions 59, 55, 51, 45, 39, 32, 26, 20, 14, 8, and 1), distress aversion (questions 61, 54, 50, 48, 44, 34, 31, 25, 19, 13, 7, and 2), procrastination (questions 47, 42, 36, 17, 11, and 5), distraction/suppression (questions 40, 33, 27, 15, 9, and 3), denial/repression (questions 60, 56, 52, 49, 46, 35, 28, 23, 21, 16, 10, and 4), and distress endurance (questions 62, 57, 53, 48, 37, 29, 24, 18, 12, and 6). Questions 23 and 30 are calculated and scored in reverse order. The questionnaire is scored on a 6-point Likert scale (strongly agree = 5 to strongly disagree = 0), and a higher score indicates higher experiential avoidance. The instrument's developers reported Cronbach's alpha coefficients of 0.91 to 0.95 in different samples. They reported the correlation of this questionnaire with the Commitment and Action Questionnaire ($r=0.74$) as an indicator of adequate validity. In Iran, in the study by Darabi & Ghanbari (28), the Cronbach's alpha coefficient of this instrument was obtained higher than 0.89 (28). The data were analyzed using descriptive statistics, the chi-square test, statistical assumptions (Kolmogorov-Smirnov test, Levine test, M-box test, and Mauchly kurtosis), and repeated measures analysis of variance using SPSS version 26 statistical software. The significance level used in the tests was 0.05.

Table 1. Summary of content of brief cognitive-behavioral therapy sessions

Therapeutic phases	Treatment strategies	Sessions
Therapeutic orientation and emotion regulation skills training	Commitment to treatment, cognitive/behavioral model of automatic thoughts, conceptualization of irrational beliefs and cognitive distortions, life event list, stimulus control and sleep hygiene, relaxation skills training, and behavioral restructuring	First four treatment sessions
Cognitive flexibility and effective coping skills	Role-playing, challenging negative automatic thoughts, identifying cognitive distortions and Socratic questioning and answering, identifying core beliefs and emotion-focused, and problem-focused coping strategies	Second four treatment sessions
Preventing symptom recurrence	Review and consolidation of training, mental exercises of learned skills, and summarization	Two final sessions

Results

The mean and standard deviation of the age of the subjects in the experimental group was 43.40 ± 3.92 , and in the control group was 44.07 ± 4.49 ($P < 0.307$). The chi-square test results also showed no significant difference between the subjects in the two groups in demographic characteristics, educational level, marital status, employment status, and duration of illness ($P < 0.05$). The mean and standard deviation of the dependent variables and their subscales are compared in Table 2. The results show that the mean total rumination score, total experiential avoidance score, and subscales decreased in the experimental group compared to the control group at the post-test and follow-up stages.

For data analysis, repeated measures analysis of variance was used, and for comparison of measurement steps in two groups, the Bonferroni post hoc test was used. The Kolmogorov-Smirnov test was used to examine the normality of the distribution of research variables, and the condition of normality of the data was met for rumination ($F = 0.116$ and $P < 0.194$) and experiential avoidance ($F = 0.147$ and $P < 0.331$) ($P < 0.05$). The results of the Levine test showed that its level was not significant in any of the variables of rumination ($F = 1.141$ and $P < 0.292$) and experiential avoidance ($F = 2.886$ and $P < 0.398$). Therefore, we can be confident that the distribution of scores in the studied groups is similar ($P < 0.05$) (table 2). The results of the M-Box test also indicated that the assumption of homogeneity of the variance-covariance matrix was valid (Box's $M = 26.429$, $F = 2.340$, and $P = 0.486$).

Also, the assumption of multiple correlation of dependent variables was examined with Mauchly's sphericity test, and the results showed that the significance level for each of the research variables was equal to 0.001, so the Sphericity assumption was rejected. Due to the violation of this assumption, the Greenhouse-Geisser test correction was used.

Accordingly, and considering the other assumptions examined in the previous step, all assumptions for conducting repeated measures analysis of variance are valid.

The eta square was about 0.78, which means that 0.78 percent of the changes in rumination and experiential avoidance post-test scores in patients with irritable bowel syndrome participating in the present study were related to the effect of the short-term cognitive-behavioral therapy program.

Also, the results of the Pillai effect, Wilks' lambda, Hethling effect, and highest root tests related to the difference of the research variables were statistically significant. Therefore, in the post-test phase, the experimental and control groups were significantly different on at least one of the research variables.

According to the results of Table 4, since the significance level related to time is less than 0.05, it can be accepted that there is a significant difference between the mean scores of rumination and its subscales and between the mean scores of experiential avoidance and its subscales in different stages of measurement (pretest, posttest, and follow-up).

Also, considering the significance of the time*group interaction effect and the significance of the group effect, it is concluded that the rate of changes in rumination and experiential avoidance during the pretest, posttest, and follow-up stages were not the same in the two groups and significantly reduced in the experimental group compared to the control group. According to the eta squared value, 0.53% of the changes in rumination score and 0.61% of the changes in experiential avoidance score during the stages were due to participation in short-term cognitive-behavioral therapy sessions.

According to the results in Table 5, there is a significant difference between the mean scores of rumination and experiential avoidance in the pre-test and post-test, as well as in the pre-test and follow-up; however, there was no significant difference between the mean scores in the post-test and follow-up ($P < 0.05$).

Table 2. Mean and standard deviation of the research variables by group and different measurement stages

Dependent variable	Group	Number	Pre-test		Post-test		Follow-up	
			Mean	SD	Mean	SD	Mean	SD
Expression	Experimental	20	11.45	1.79	9.50	1.05	9.30	1.12
	Control	20	11.25	1.68	11.40	1.56	11.40	1.56
Reflection	Experimental	20	12.90	1.61	10.05	1.43	10.05	1.35

Depression	Control	20	12.05	1.66	12.25	1.55	12.25	1.55
	Experimental	20	16.55	1.35	13.45	1.66	13.20	1.67
Rumination- total score	Control	20	15.50	1.31	15.45	1.27	15.44	1.27
	Experimental	20	40.90	4.75	33.00	4.14	32.55	4.11
Behavioral avoidance	Control	20	38.80	4.65	39.10	4.38	39.09	4.38
	Experimental	20	30.85	3.15	27.10	2.97	26.35	2.94
Distress aversion	Control	20	30.30	3.54	30.45	3.31	30.55	3.33
	Experimental	20	29.85	3.48	25.35	2.87	24.90	2.78
Procrastination	Control	20	27.65	4.08	27.95	3.60	28.00	3.62
	Experimental	20	23.60	2.64	19.35	3.19	19.05	2.85
Distraction/ Suppression	Control	20	23.35	3.70	23.45	3.54	23.45	3.54
	Experimental	20	31.00	3.62	25.85	2.47	25.50	2.30
Denial/repression	Control	20	30.50	3.42	30.75	3.07	30.75	3.07
	Experimental	20	31.10	4.37	29.50	2.60	29.15	2.23
Distress endurance	Control	20	34.25	4.65	34.25	4.65	34.25	4.65
	Experimental	20	32.10	4.39	29.90	2.51	29.60	2.21
Experiential avoidance - total score	Control	20	32.25	3.72	33.40	3.60	33.40	3.60
	Experimental	20	178.50	21.65	157.05	16.61	154.55	15.31
	Control	20	178.30	23.11	180.25	21.77	180.40	21.81

Table 3. Results of statistical assumptions in research variables

Dependent variable	Levine test				Kolmogorov-Smirnov test		
	F statistics	df ₁	df ₂	Sig. level	F statistics	df	Sig. level
Expression	0.327	1	38	0.571	0.259	40	0.133
Reflection	0.867	1	38	0.358	0.132	40	0.075
Depression	2.051	1	38	0.160	0.142	40	0.0885
Rumination - total score	1.141	1	38	0.292	0.116	40	0.194
Behavioral avoidance	0.828	1	38	0.369	0.119	40	0.162
Distress aversion	1.811	1	38	0.186	0.102	40	0.200
Procrastination	0.638	1	38	0.429	0.134	40	0.066
Distraction/ Suppression	2.138	1	38	0.152	0.135	40	0.064
Denial/repression	0.301	1	38	0.286	0.132	40	0.079
Distress endurance	3.106	1	38	0.086	0.116	40	0.191
Experiential avoidance - total score	2.886	1	38	0.398	0.147	40	0.331
M-Box test		F statistics		Sig. level			
26.429		2.340		0.486			

Table 4. Results of analysis of variance with repeated measures in the variables under study

Variable	Sources of change	Sum of squares	df	Mean squares	value F	Sig.	Eta squared	Statistical power
Expression	Group	48.133	1	48.133	9.227	0.004	0.195	0.841
	Time	24.267	1.101	22.049	16.685	0.003	0.305	0.9885
	Group*time	32.467	1.101	29.499	22.323	0.007	0.370	0.898
Reflection	Group	42.008	1	42.008	7.380	0.010	0.163	0.754
	Time	46.817	1.165	40.195	34.322	0.000	0.275	0.994
	Group*time	62.017	1.165	53.245	45.466	0.000	0.415	0.996
Depression	Group	35.208	1	35.208	7.322	0.011	0.162	0.751
	Time	74.017	1.185	62.466	52.836	0.000	0.582	1.000
	Group*time	65.417	1.185	55.208	46.697	0.000	0.551	1.000
Rumination - total score	Group	374.533	1	375.533	20.313	0.005	0.348	0.699
	Time	414.450	1.147	361.322	94.722	0.003	0.614	1.000
	Group*time	468.617	1.147	408.546	107.102	0.002	0.538	0.878
Behavioral avoidance	Group	163.333	1	163.333	6.006	0.019	0.136	0.666
	Time	104.817	1.554	67.459	27.369	0.000	0.419	1.000
	Group*time	128.317	1.554	82.584	33.505	0.000	0.469	1.000
Distress aversion	Group	40.833	1	40.833	1.352	0.022	0.134	0.572
	Time	129.867	1.160	111.986	24.568	0.000	0.393	0.999

Procrastination	Group*time	171.267	1.160	147.672	32.400	0.000	0.460	1.000
	Group	226.875	1	226.875	7.959	0.008	0.173	0.785
	Time	123.717	1.123	110.126	34.191	0.000	0.474	1.000
Distraction/ Suppression	Group*time	135.450	1.123	120.571	37.433	0.000	0.496	1.000
	Group	310.408	1	310.408	13.341	0.001	0.260	0.945
	Time	172.317	1.145	150.485	39.478	0.000	0.510	1.000
Denial/Repression	Group*time	207.817	1.145	181.487	47.611	0.000	0.556	1.000
	Group	563.333	1	563.333	12.476	0.001	0.247	0.931
	Time	21.617	1.198	18.043	7.694	0.005	0.168	0.823
Distress endurance	Group*time	21.617	1.198	18.043	7.694	0.005	0.168	0.823
	Group	238.008	1	238.008	7.350	0.010	0.162	0.752
	Time	32.717	1.150	28.461	11.601	0.001	0.234	0.938
Experiential avoidance - total score	Group*time	42.117	1.150	36.638	14.934	0.000	0.282	0.978
	Group	8283.408	1	8283.408	23.192	0.000	0.379	0.997
	Time	3159.650	1.135	2783.097	101.976	0.000	0.609	1.000
	Group*time	3787.617	1.135	3336.226	122.243	0.000	0.611	1.000

Table 5. Results of the Bonferroni post hoc test for comparing different measurement stages in the research variables

Research variables	Stage	Mean difference	Error	Sig.
Expression	Pre-test*post-test	0.900*	0.211	0.000
	Pre-test*follow-up	1.000*	0.245	0.001
	Post-test*follow-up	0.100	0.069	0.463
Reflection	Pre-test*post-test	1.325*	0.223	0.000
	Pre-test*follow-up	1.325*	0.217	0.000
	Post-test*follow-up	0.000	0.073	1.000
Depression	Pre-test*post-test	1.600*	0.232	0.000
	Pre-test*follow-up	1.725*	0.212	0.000
	Post-test*follow-up	0.125	0.080	0.381
Rumination - total score	Pre-test*post-test	3.825*	0.399	0.000
	Pre-test*follow-up	4.050*	0.393	0.000
	Post-test*follow-up	0.225	0.123	0.225
Behavioral avoidance	Pre-test*post-test	1.800*	0.333	0.000
	Pre-test*follow-up	2.125*	0.362	0.000
	Post-test*follow-up	0.325	0.214	0.411
Distress aversion	Pre-test*post-test	2.100*	0.435	0.000
	Pre-test*follow-up	2.300*	0.433	0.000
	Post-test*follow-up	0.200	0.140	0.486
Procrastination	Pre-test*post-test	2.075*	0.366	0.000
	Pre-test*follow-up	2.225*	0.366	0.000
	Post-test*follow-up	0.150	0.103	0.463
Distraction/ Suppression	Pre-test*post-test	2.450*	0.396	0.000
	Pre-test*follow-up	2.625*	0.396	0.000
	Post-test*follow-up	0.175	0.122	0.477
Denial/Repression	Pre-test*post-test	0.800*	0.219	0.027
	Pre-test*follow-up	0.975*	0.333	0.017
	Post-test*follow-up	0.175	0.122	0.477
Distress endurance	Pre-test*post-test	1.025*	0.303	0.005
	Pre-test*follow-up	1.175*	0.330	0.003
	Post-test*follow-up	0.150	0.103	0.463
Experiential avoidance - total score	Pre-test*post-test	10.250*	0.962	0.000
	Pre-test*follow-up	10575*	0.994	0.000
	Post-test*follow-up	0.325	0.578	1.000

Discussion

This study aimed to investigate the effectiveness of brief cognitive-behavioral therapy on rumination and experiential avoidance in patients with irritable bowel syndrome. The results showed that rumination in the experimental group significantly reduced compared to the control group, and this effect was also stable at the follow-up stage. In conclusion, brief cognitive-behavioral therapy is beneficial in decreasing rumination in patients with irritable bowel syndrome. This finding is in line with the results of some previous studies, such as (20, 22, 29, 30).

To explain this finding, it seems necessary to point out that in brief cognitive-behavioral therapy, changing the content of dysfunctional thinking is the most effective method for changing and modifying emotions and rumination in chronic medical patients. Therefore, during brief cognitive-behavioral therapy, patients with irritable bowel syndrome become aware of the impact of cognitions on their feelings and behaviors, learn to identify their negative automatic thoughts and common cognitive errors and replace them with more effective thoughts. Furthermore, training in exercises related to a brief cognitive-behavioral approach causes patients to experience physiological effects opposite to rumination. Finally, using the downward arrow method, the negative core beliefs that initiate rumination are identified, and through their empirical examination, analysis of negative beliefs, memorization of their opposing beliefs, and positive interpretation of their worrisome thoughts, they respond in a new way (such as dealing with the problem differently and adapting to the problem without resorting to rumination), and this leads to a reduction in the frequency and intensity of rumination in people with irritable bowel syndrome. Furthermore, when cognitive distortions and negative automatic thoughts about having a chronic medical illness form, patients' reduced rumination becomes even more damaged. In this regard, teaching cognitive components to patients leads to cognitive re-evaluation and conceptualization. As problem-solving skill training strengthens planned problem-solving in patients, they become aware of ineffective beliefs and take responsibility for their lives by becoming familiar with and identifying negative automatic thoughts.

Next, by assessing automatic thoughts and training to respond to automatic thoughts and using an ineffective thought record sheet, they replace rumination with more effective thoughts. Identifying and correcting intermediate beliefs using the Socratic questioning technique, evaluating the advantages and disadvantages of a belief, and cognitive reconceptualization leads to awareness of the root of problems and how they develop. Finally, by modifying core beliefs using the core belief worksheet, the evidence review technique for and against, and the downward arrow, the degree of rumination in patients with irritable bowel syndrome is decreased.

Another result of the present study showed that the experimental group's experiential avoidance was significantly reduced compared to the control group, and this effect remained stable at follow-up. In conclusion, brief cognitive-behavioral therapy is beneficial in decreasing experiential avoidance in patients with irritable bowel syndrome. This result is consistent with the results of previous studies, including (17, 18, 19, 31).

To explain this result, we can state that this treatment may play an important role in reducing experiential avoidance related to gastrointestinal illness by making the patients aware of positive and negative emotions and their timely acceptance and expression. Previous studies have also shown that high levels of positive and reduced negative emotions play an important role in positive self-judgment and perception. It seems that the therapeutic changes of this method are due to the therapeutic approaches that help these patients to accept the traumatic events caused by the disease and the threat to their independence in life and to avoid thoughts and symptoms that remind them of the trauma that led to the disease or threatened the patient's identity; consequently, instead of avoiding these symptoms, they emphasize new learning that leads to a change in their lifestyle and organize their actions based on moving along the path of new training with cognitive and behavioral flexibility. Therefore, after going through this process, the patients are freed from worry and avoidance thoughts and return to valuable life paths by accepting positive thoughts, facing the scenes, people, or places they avoided, and separating actions from thoughts.

The first limitation of the present study was the use of

convenience sampling and the selection of the study population only from patients with irritable bowel syndrome referred to Moheb Hospital in Tehran. Therefore, caution is necessary in generalizing the results to other patients with digestive disorders. In this study, data collection was conducted using a quantitative and self-report questionnaire, which may be associated with biased and distorted responses. Therefore, we suggest future studies replicate this study in other gastrointestinal patients and use clinical interviews besides the questionnaire to collect information.

We also recommend that the effectiveness of this treatment method be compared with that of other chronically ill patients and that the impact of these treatment approaches on various aspects of psychosocial life be evaluated.

Conclusion

According to the researcher, one of the clear advantages of this treatment is that it allows patients to learn new and specific skills, such as increasing adaptability, confronting fear and worry, and managing emotional regulation strategies. This feature causes the individual to stop avoiding it and flexibly face it and other difficult situations resulting from living with the disease. Brief cognitive-behavioral therapy also focuses on cognitive restructuring, i.e., identifying, modifying, and negatively evaluating worrying and disturbing thoughts, as well as adapting the attitude of overestimating risk and overvaluing the importance of thoughts related to the disease. During treatment, patients learn how to confront intrusive thoughts by using appropriate coping methods, and thus, the level of experiential avoidance in patients decreases.

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Conflict of Interest

The authors declare that they have no conflict of interest.

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