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A Comparative Study on the Effects of Cognitive-Behavioral Therapy and Emotion-Focused Therapy on Distress Tolerance in Patients with Irritable Bowel Syndrome

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Quantitative Study

Abstract

Background: The present study was conducted with the aim of comparing the effects of cognitive-behavioral therapy (CBT) and emotion-focused therapy (EFT) on distress tolerance in patients with irritable bowel syndrome (IBS).

Methods: The present study was conducted using a quasi-experimental method with a pretest-posttest design, follow-up, and a control group. The statistical population of the present study included IBS patients referred to Masoud Gastroenterology and Liver Clinic in Tehran, Iran. From among these patients, 35 patients were randomly selected and were assigned to 3 groups (2 experimental groups and 1 control group). The experimental groups took part in 8 weekly sessions of CBT or EFT and the control group did not receive any psychological intervention. The Distress Tolerance Scale (DTS) (Simons & Gaher, 2005) was used as the measurement instrument in this study. Two-factor repeated measures analysis of variance (mixed ANOVA) and one-way analysis of covariance (ANCOVA) were used to analyze the data.

Results: The results revealed that CBT and EFT were effective on the distress tolerance of IBS patients and both therapies had a lasting effect over time. There was no significant difference between the effects of the two methods on distress tolerance.

Conclusion: CBT and EFT are effective interventions in enhancing the distress tolerance of IBS patients and these interventions can be used in programs designed to manage the symptoms of this disease.

Keywords: Cognitive-behavioral therapy, Emotion-focused therapy, Distress tolerance, Irritable bowel syndrome

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Introduction

Irritable bowel syndrome (IBS) is a common gastrointestinal disorder that manifests as abdominal pain or discomfort along with bowel habits (for example, diarrhea, constipation, or both) in the absence of a specific organ disease (Zamani, Alizadeh-Tabari, & Zamani, 2019). IBS is considered to be the most common, costly, and disabling disorder of the gastrointestinal tract (Zamani et al., 2019). Although it can occur in both men and women, at all ages, and in all socioeconomic groups (Eriksson, Andren, Kurlberg, & Eriksson, 2015), it is more commonly diagnosed among younger patients and women (Pashing & Khosh Lahjeh Sedgh, 2019). The prevalence of IBS reported across the world varies between 5 and 20% (Eriksson et al., 2015). The pathology of this disease has remained unknown. Several studies have emphasized the role of psychological factors in the onset and course of IBS, especially in people with severe symptoms (Bagherian Sararoudi, Afshar, Adibi, Daghaghzadeh, Fallah, & Abotalebian, 2011). There is no single treatment for IBS. Psychotherapy methods can improve the symptoms of IBS (Bagherian Sararoudi et al., 2011). Distress tolerance is one of the factors that can determine the incidence of psychological problems in people (Azizi, Mirzaei, & Shams, 2010). Distress tolerance is often referred to as the ability of individuals to resist negative or unpleasant emotional states (Azizi et al., 2010). Distress tolerance can be the result of cognitive or physical processes, but is experienced as an emotional state that is often characterized by a desire to act to alleviate the emotional experience (Kolivand, Nazari Mahin, Jafari, 2015). Distress tolerance is multidimensional in nature and includes the ability to tolerate and evaluate and the capacity to accept emotional states, and the way a person regulates emotion, the amount of attention absorbed by negative emotions, and the amount of its contribution to the development of dysfunction (Leyro, Zvolensky, & Bernstein, 2010). The structure of distress tolerance is such that it supports progress and survival under conditions such as drug use, anxiety, personality disorders, and mood (Leyro et al., 2010). People who are less tolerant of distress than others are more likely to respond to stress (Leahy, 2003). Thus, identifying effective interventions to enhance distress tolerance in IBS patients can provide them with coping strategies in the face of effective stressors as one of the risk factors of this disease and can be helpful in the treatment of this disease and coping with it (Schmidt, Richey, Cromer, & Buckner, 2007). Cognitive behavioral therapy (CBT) and emotion-focused therapy (EFT) as effective and widely used therapies have been used to increase distress tolerance in IBS patients. During cognitive-behavioral interventions, one learns to consider his or her thoughts and beliefs as hypotheses the validity of which needs to be tested. Moreover, in this method, the individual is encouraged to identify the relationship between dysfunctional thoughts and negative emotions and stress, and to overcome stressful factors and thoughts through cognitive reconstruction and coping-based tasks (Ebrahimi et al., 2015). CBT is based on the hypothesis that lifestyle, behavioral patterns, and attitudes toward the self and the world affect the level of anxiety experienced, and the assessment sessions will reveal which cognitive and behavioral patterns exacerbate or perpetuate IBS symptoms (Ebrahimi et al., 2015). Emphasizing the importance of awareness, acceptance, and recognition of emotions and their visceral experience, EFT helps clinicians become aware of their emotions and experience, accept, manage, and explore their different dimensions. EFT is based on the principle that we can only change when we accept ourselves as we are (Carpenter, Angus, Paivio, & Bryntwick,

2016). The underlying hypothesis of EFT is that emotion is a fundamental and determining factor in setting behavioral patterns and information processing, facilitating one's adaptation to others and conditions (Carpenter et al., 2016). Hence, emotions should be processed and accepted so that their meaning can be determined which will pave the way for an increase in the level of distress tolerance in IBS patients by increasing positive emotions (Vujanovic, Dutcher, & Berenz, 2017). To determine the most effective intervention on increasing the level of distress tolerance, the present study was conducted to compare the effects of CBT and EFT on distress tolerance in IBS patients.

Methods

The present research was conducted using a quasi-experimental method with a pretest-posttest design, follow-up, and a control group. The statistical population of this study included all IBS patients referred to Masoud Gastroenterology and Liver Clinic in District 6 of Tehran, Iran, in 2019 to receive psychological counseling according to the diagnosis of gastroenterologists. After obtaining the permission of the Ethics Committee of Hormozgan University of Medical Sciences, Iran, (IR.HUMS.REC.1398.331), the patients were enrolled into the study based on the inclusion and exclusion criteria. The study inclusion criteria included lack of psychological drugs use, lack of any psychological therapies during the last 3 months, willingness to participate in the study, a minimum education level of diploma, lack of addiction to any drug, commitment to attending treatment sessions, and answering the Irritable Bowel Syndrome Quality of Life (IBS-QOL) questionnaire (The high quality of life in patients did not require strengthening their distress tolerance). (Patients who had a high score in the Quality of Life Questionnaire in patients with irritable bowel syndrome did not need to increase their distress tolerance).The study exclusion criteria included a history of colon cancer, a colon disease, and unwillingness to participate in the study. Eligible patients were selected and assigned to 3 groups (15 patients in each group) using a convenience sampling method. The intervention groups were treated for 90 minutes in 8 weekly sessions and the control group did not receive any psychological intervention. During treatment, 7 patients were excluded from the research due to lack of regular attendance at the treatment sessions, lack of timely performance of tasks, and for personal reasons, and finally, 38 people remained in the research, 11 in the CBT group, 12 in the EFT group, and 15 in the control group. After 3 months, 1 subject in the EFT group and 2 subjects in the control group were excluded from the analysis due to lack of access to and completion of the questionnaires, and finally, data of about 35 people (11 patients in Experimental Group 1, 11 patients in Experimental Group 2, and 13 subjects in the control group) were analyzed.

Patients, Instruments, and Interventions: The measurement instruments of this study included demographic information questionnaire (including questions on age, gender, and marital status), the IBS-QOL questionnaire (Gholamrezaei et al., 2011), and the Distress Tolerance Scale (DTS). The DTS is designed by Simons and Gaher (2005). The main DTS form includes 16 items and its Persian version includes 15 items in the 4 subscales of tolerating emotional distress, absorption by negative emotions, mental assessment of distress, and adjusting efforts to relieve anxiety. The items are scored on a 5-point scale, including strongly agree, slightly agree, equally agree and disagree, slightly disagree, and strongly disagree. A high score on this scale indicates high distress tolerance. The alpha coefficient obtained for the subscales of tolerance,

absorption, evaluation, and adjustment, and the whole scale were 0.72, 0.82, 0.78, 0.70, and 0.82, respectively. The CBT protocol used in this study was based on the model proposed by Fouladi, Mohammadkhani, Shahidi, and Ebrahimi Daryani (2018). Its therapeutic sessions included 8 individual therapy sessions once a week for 90 minutes to increase distress tolerance and improve symptoms by improving bowel habits, developing appropriate nutritional models, identifying and correcting dysfunctional thoughts and cognitive errors, reducing stress, reducing focused attention to symptoms of disease, and preventing the recurrence of the disease (Table 1).

The model used in EFT is based on the Greenberg Therapeutic Guideline (developer of this therapy) (Elliott & Greenberg, 2007). Therapeutic sessions included 8 sessions of treatment once a week for 90 minutes in the 3 stages of emotion recognition, emotion regulation, and behavioral measures to increase resilience and improve the symptoms of the disease by improving bowel habits, developing appropriate nutritional models, identifying primary and secondary emotions, self-reinforcement, focusing attention on neglected emotions and experiences, and preventing disease recurrence (Table 2).

The subjects of the present study included IBS patients who referred to gastroenterologists. The DTS was completed by all referred individuals. The patients were randomly divided into 3 groups: the first group received CBT treatment, the second group received EFT treatment, and the third group did not receive any psychological treatment. The DTS was completed by all patients before, after, and 3 months after the intervention. Control group patients were also tested at baseline, after 2 months, and after 3 months to analyze the research hypotheses, two-way repeated measures analysis of variance (mixed ANOVA), one-way analysis of covariance (ANCOVA), and Bonferroni's method of pairwise multiple comparisons were used. To compare the differences between the groups, mixed ANOVA with the measurement of group differences was used. Before using this test, its assumptions including normality of the data and the homogeneity of the variance matrices, were tested using the Kolmogorov-Smirnov test and Levene's test, respectively. In general, there was no barrier to using repeated measures ANOVA.

Results

In the present study, out of 87 referred patients, 32 were excluded due to unwillingness to participate in the research project.

Table 1. Description of cognitive-behavioral therapy sessions

Session	Content
1	Introducing of individuals to each other and treatment contract, The purpose is to clearly follow the rules of treatment) providing educational information about irritable bowel syndrome and preparing a list of individual problems and relaxation education
2	Explaining automatic thoughts and irritable bowel symptoms, practicing cognitive review
3	Introducing cognitive distortions of automatic thoughts related to disease symptoms and related emotions
4	Introducing pain theory, practicing mind distraction methods, determining pain baseline, muscle relaxation training, and explaining mental imagery for pain control
5	Extracting automatic thoughts about triggering situations, training and practicing anxiety management techniques, coping with it, identifying socio-cultural sources of shameful reactions to irritable bowel syndrome symptoms, and explaining patient competency standards
6	Explaining anger and its symptoms in the cognitive model, explaining training and cognitive-behavioral exercises for anger management, teaching bold behavior, problem solving skills training, explaining self-efficacy and its relationship with problem solving skills, and explaining its relationship with irritable bowel syndrome symptoms
7	Identifying and challenging dysfunctional attitudes of high standards (negative perfectionism)
8	Explaining the ways of terminating treatment, coping with the anxiety related to termination of treatment, posttest, saying farewell, and making an appointment for follow-up

Table 2. Description of emotion-focused therapy sessions

Session	Content
1	Introducing of individuals to each other and treatment contract, providing educational information about irritable bowel syndrome and preparing a list of patient's problems and conceptualizing the emotion-focused treatment
2	Identifying basic emotions, identifying conflicting, dual, and critical feelings about self and important and influential people in life
3	Stating and understanding the effect of irrational thinking on emotional turmoil and teaching recognition of primary and secondary emotions
4	Identifying the underlying emotional processes and identifying problem situations
5	Identifying emotional schemas, emphasizing the acceptance of experiences, visual encounter (Visual exposure), and implementing a one-seat or two-seat design
6	Converting negative emotions into positive emotions, strengthening emotional processing, rebuilding emotions, evoking bad emotions, providing support for emotions, and resolving (Re-evoke bad feelings to become positive emotions.)
7	Teaching the process of transmitting the feelings of hopelessness, guilt, anger of subjects to create and increase their ability to deal with emotions
8	Explaining the ways of terminating treatment, coping with the anxiety related to termination of treatment, posttest, saying farewell, and making an appointment for follow-up

Out of the 55 patients remaining in the study, 10 were excluded according to the inclusion and exclusion criteria. Then, the 45 remaining individuals were randomly divided into 3 groups. During the study, 7 of all patients were excluded due to not attending treatment sessions regularly and not performing the tasks, and 3 patients were excluded from the study due to not answering the test questions at the follow-up stage. In total, 38 IBS patients (21 women) were included in the study. The mean age of the female and male subjects was 39.8 years and 45.6 years, respectively, 11 in the CBT group, 12 in the EFT group, and 15 in the control group (Finally, 35 patients remained in the research design, of which 11 in the first experimental group, 11 in the second experimental group and 13 in the control group). After 3 months, 1 subject in EFT group and 2 subjects in the control group were excluded from analysis due to lack of access to and answering the questionnaires, and finally, data related to 35 people (11 patients in Experimental Group 1, 11 patients in Experimental Group 2, and 13 subjects in the control group) were analyzed. To examine the homogeneity of the 3 research groups in terms of demographic variables (age, gender, and marital status), one-way ANOVA and chi-square test were used (Table 3). The 3 research groups were homogeneous in terms of demographic variables.

Table 4 presents descriptive statistics including the mean and standard deviation of the scores of the subjects of the 3 groups in the studied variables.

CBT and EFT caused an increase in distress tolerance scores, but such a change was not observed in the control group ($p < 0.01$). To evaluate its (evaluate the effectiveness of CBT and EFT therapies on the tolerance of patients with irritable bowel syndrome and their effectiveness over time)effectiveness and compare it among the study groups, one-way ANCOVA and Bonferroni's method of pairwise multiple comparisons were used. To evaluate the persistence of effectiveness, the scores of posttest and follow-up in the 2 experimental groups (CBT and EFT) were compared using the mean test of the 2 dependent groups. Accordingly, distress tolerance is explained and influenced by the type of treatment.

Table 3. Comparison of the study groups in terms of frequency distribution of gender and marital status

Variable		Research group			X^2	P-value
		Cognitive-behavioral therapy	Emotion-focused therapy	Control		
Gender	Male	5	5	4	0.734	0.693
	Female	6	6	9		
Marital status	Single	4	2	6	2.100	0.350
	Married	7	9	7		

Table 4. Mean and standard deviation of research data

Variable	Stage	Cognitive-behavioral therapy (n = 11)	Emotion-focused therapy (n = 11)	Control (n = 13)
		Mean ± SD	Mean ± SD	Mean ± SD
Distress tolerance	Pretest	31.27 ± 7.64	8.08 ± 30.73	32.85 ± 8.25
	Posttest	42.82 ± 6.88	8.99 ± 40.64	32.00 ± 8.25
	Follow-up	43.82 ± 6.76	8.89 ± 41.55	32.15 ± 8.47

Discussion

The present study was conducted to compare the effects of CBT and EFT on the distress tolerance of IBS patients. Based on the results, CBT increased the distress tolerance of these patients, which is consistent with the results of studies conducted by Kolivand et al. (2015) and Lackner Jaccard, Krasner, Katz, Gudleski, and Holroyd (2008). IBS is associated with various social, economic, physical, emotional, and interpersonal consequences, which might lead to increased stress, mental instability, and disability. In CBT, it is inevitable to cope with the crisis (In the context of CBT, illness and crisis are inevitable, but it is possible to increase their tolerance for these situations by changing people's thinking, attitudes and behaviors in relation to unpleasant situations.), but it is possible to increase people's distress tolerance in unpleasant situations by changing their thinking, attitudes, and behaviors in relation to unpleasant situations. Based on the results, EFT also increased the distress tolerance level of these patients, which is consistent with the results of studies conducted by Havaiy, Kazemi, Habibollahi, and Izadikhah (2017), Faghih and Kazemi (2018), and Schmidt et al. (2007). In explaining this result, it can be stated that distress tolerance is an internal psychological source for the facilitation of the overcoming of problems and eliminating of their psychological effects in order to establish and maintain biopsychological balance in stressful and disease conditions (Leyro et al., 2010). Moreover, it can manage stress and facilitate the achievement of relaxation and well-being in individuals (Schmidt et al., 2007). Given what was stated above, CBT and EFT interventions were effective in increasing the distress tolerance of IBS patients, and these interventions can be used to prevent the exacerbation of the disease and accelerate the improvement of clinical symptoms in IBS in the field of health. The present study had some limitations.

In IBS patients, the severity of disease is an important component that was impossible to investigate due to time limitations in this study and the effectiveness of interventions was evaluated without considering the severity of the disease variable. Furthermore, lack of control of intervening variables such as economic and social status, job, level of education, income of research participants was another limitation of the present study. Accordingly, further studies on the effectiveness of CBT and EFT interventions are recommended through controlling the effect of intervening variables and considering the effect of these interventions on the severity of IBS symptoms. Based on the results, it is recommended that psychologists use cognitive-behavioral interventions and EFT in addition to routine medical treatments to increase distress tolerance of IBS patients.

Conclusion

CBT and EFT interventions were effective in increasing the distress tolerance of irritable bowel syndrome patients, and these interventions can be used to prevent

exacerbation of the disease and accelerate the improvement of clinical symptoms of IBS in the field of health. The present study suffers some limitations.

Conflict of Interests

Authors have no conflict of interests.

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