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Original Article

Comparison of the Effectiveness of Reality Therapy and Compassionate Focused Therapy in the Reduction of Depression, Anxiety, Stress, and Physical Symptoms in patients with Irritable Bowel Syndrome

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Abstract

Background and Objective: Irritable bowel syndrome is the most common digestive system disorder. Despite the long period of study in the treatment of irritable bowel syndrome, only a small number of treatments have proven effective. The current study aimed to compare the effectiveness of reality therapy and compassion-focused therapy in the reduction of depression, anxiety, stress, and physical symptoms in patients with irritable bowel syndrome.

Materials and Methods: The present study was conducted on 45 patients with irritable bowel syndrome (diagnosed by a gastroenterologist applying the Rome III criteria) who were assigned to two experimental groups: reality therapy (n=15) and compassion-focused therapy (n=15), as well as the control group (n=15). The experimental groups received eight sessions of reality therapy and compassion-focused therapy. All three groups responded to the Severity of Symptoms of Irritable Bowel Syndrome (IBS-SI) and Depression-Anxiety-Stress Scale (DASS-42) as pre-post and follow-up tests.

Results: The results of the repeated measures ANOVA demonstrated a significantly lower mean score in depression, anxiety, stress, and physical symptoms among the experimental group in the post-test. The follow-up test administered eight weeks after the post-test did not show any change in the results.

Conclusions: The obtained results supported the effectiveness of reality therapy and compassion-focused therapy in the reduction of depression, anxiety, stress, and physical symptoms in patients with irritable bowel syndrome. Moreover, it was reported that there was no significant difference in the efficacy of these two treatments.

Keywords: Anxiety, Compassion focused therapy, Depression, Irritable bowel syndrome, Reality therapy

Background

Irritable bowel syndrome is a functional disorder of the digestive system, and its diagnosis is based on such symptoms as chronic abdominal pain and defecation changes in the absence of any organic cause [1]. This disease is the most common gastrointestinal disorder. The prevalence of irritable bowel syndrome is reported as 10%-15% in North America and about 11.5% in Europe [2]; nonetheless, the prevalence varies from country to country. According to population studies conducted in Iran, the prevalence of this disease is reported as 3.5%-5.8% [3]. Based on the bio-psycho-social model, all physical, psychological, behavioral, and social factors in interaction should be considered in describing how this syndrome is formed since none of these factors alone are sufficient to justify irritable bowel syndrome in patients [4]. despite the long period of study in the treatment of irritable bowel syndrome, only a small number of treatments have proven effective, and treatment of this disorder is often unattainable. While a number of medications offered by physicians have shown their effects on irritable bowel syndrome , none has yet been able to provide adequate treatment for the full spectrum of irritable bowel syndrome [5]. Psychological therapies, such as cognitive-behavioral therapy, relaxation, behavioral therapy, psychotherapy, and hypnosis, despite their effectiveness, have met with conflicting results [6]; therefore, it is of utmost importance to identify

effective treatments for irritable bowel syndrome.

Reality therapy is one of the counseling and psychotherapy approaches that consider the acceptance of responsibility, reality, distinguishing between right and wrong, as well as their relationship with the daily life of individuals [7]. Reality therapy is based on choice theory which believes that all our actions are behavior. Glasser considers behavior to include the four components of action, thought, emotion, and physiology. We control the two components of thought and action directly and indirectly over emotion and physiology [8]. In fact, the main purpose of the reality therapy approach is to help people become aware of their needs, monitor behavior, and make appropriate choices [9]. Hoseini has examined the effectiveness of group reality therapy in anxiety sensitivity in women with irritable bowel syndrome. Data analysis demonstrated that the use of group reality therapy significantly led to a decrease in the mean scores of anxiety sensitivity and its components (fear of physical anxiety, fear of lack of cognitive control, and fear of anxiety view) in the experimental group, as compared to those obtained in the control group [10]. Farmani, in a study, evaluated the effectiveness of group reality therapy in the reduction of stress, anxiety, depression, and loneliness in patients with multiple sclerosis. Findings pointed to a significant decrease in the mean score of all four variables of stress, anxiety, depression, and loneliness in the experimental group after the intervention [11].

Compassion-focused therapy is a meta-diagnostic model that uses common frameworks and processes in classical cognitive-behavioral therapy to manage the flow of therapy. This treatment is based on the current understanding of emotion regulation systems. Therapeutic sessions emphasize the integration of these systems with human behavior and thoughts [12]. The goal of compassion-focused therapy is to balance these emotional systems. Biodegradation forms the basis of this treatment. In humans, at least three types of emotion regulation systems have evolved: the threat and self-protection system, the incentive and resource-seeking system, as well as the soothing system. This method emphasizes the relationship between cognitive patterns and these three emotion regulation systems. In this way, they move from the first system to the second and third systems [13].

The main treatment technique is compassionate mind training, in which the client is taught the skills and characteristics of compassion. Compassionate mind training helps clinicians change the problematic cognitive and emotional patterns associated with their anxiety, anger, and self-criticism [14]. Consequently, by altering brain patterns, the secretion of the hormones oxytocin and dopamine, which will result in improved relationships, reduces the symptoms of anxiety, depression, stress, and the severity of physical symptoms. Rahmanian, in a study, examined the effectiveness of compassion-focused therapy in the improvement of psychological disorders (anxiety and depression), as well as the level of hope and adherence to treatment in patients with rheumatism. The results illustrated that compassion therapy training was effective in the improvement of psychological disorders (anxiety and depression), life expectancy, and adherence to treatment in patients with rheumatism [15]. Zarei, in a study, has investigated the effectiveness of compassion-focused therapy in the treatment of diabetic patients with depression. The results of the treatment in the experimental group after receiving eight sessions of compassion-focused therapy suggetsed that this treatment was effective in reducing depression and controlling blood sugar levels in diabetic patients [16].

Given the prevalence of irritable bowel syndrome and the fact that in this disease, like other non-structural disorders of the gastrointestinal tract, the identifticatit of psychological factors in the onset of symptoms is vital, it seems essential to make psychological interventions for these patients using two effective and relatively new approaches (reality therapy and compassion-focused therapy).

Objectives

The present study aimed to compare the effectiveness of reality therapy and compassion-focused therapy in the reduction of depression, anxiety, stress, and physical symptoms in patients with irritable bowel syndrome; therefore, the research design can be considered quasi-experimental.

Materials and Methods

The statistical population of the study includes all people who were referred to the Tehran Center for Gastroenterology and Liver Diseases due to gastrointestinal problems and received a diagnosis of irritable bowel syndrome by the gastroenterologists of this center in 2020. In this study, among the patients referred to the above health center, 45 cases were selected via the convenience sampling method and assigned into three groups (n=15 in each group). In the experimental groups (two groups), in addition to drug treatment, the subjects received reality therapy training (group 1) and compassion focus therapy (group 2), respectively, while the control group received only drug therapy.

The inclusion criteria entailed:
1. Having irritable bowel syndrome according to Rome III criteria
2. Reading and writing literacy in order to complete the questionnaires
3. Age range of 20-55 years
The exclusion criteria were:
1. Organic gastrointestinal disorders approved by a gastroenterologist
2. Presence of acute physical illness
3. Patients with psychological disorders under psychiatric treatment
The ethical considerations of the present study were as follows:
1. All individuals received written information about the research and voluntarily participated in the research.
2. Participants were assured that all information would be confidential and would be used for research purposes.
3. In order to protect privacy, the names and surnames of the participants were not registered.
The researcher also undertook to implement this intervention for the control group after the end of the research in order to observe the ethical principles. This research has the code of ethics committee number IR.IAU.TMU.REC.1399.237 from Tehran Islamic Azad University of Medical Sciences.

Measurement Tools

The assessment tools in this study included two questionnaires:
and
Irritable Bowel Syndrome Severity Index (IBS-SI): This scale, which was developed by Francis, Morris, and Horoll, consists of five sections that examine the symptoms of irritable bowel syndrome, including pain, defecation disorders, bloating, the effect of the disease on daily activities of life, and extraintestinal symptoms on an intensity scale [17]. The internal correlation coefficient of the scale is 0.86, and Cronbach's alpha is 0.69.
Depression, Anxiety, and Stress Scale (DASS-42): It was developed by Lavibond and Lavibond [18]. The main form of this questionnaire has 42 questions that each of the psychological structures of stress, anxiety, and depression are evaluated by 14 different questions. The three factors of anxiety, depression, and stress are measured by DASS-42. The validity and reliability of the test have been studied by Asghari Moghadam in Iran, and the scales of depression, anxiety, and stress have been identified with necessary conditions for application in psychological research and clinical situations in Iranian population [19].
Reality therapy training consists of eight 90-mine training sessions based on Glasser's choice theory [20]:
Session 1: Environmentalization, treatment history, review of psychological problems
Session 2: Wants of clients, quality world, continue WDEOP process
Session 3: Responsibility, Needs
Session 4: Relationships, control, internal control, relationship improvement, as well as connective and disconnected behaviors
Session 5: General behavior machine, toolbox
Session 6: Teaching perception of reality, mental filters of references, lifestyle changes
Session 7: Writing a plan, performance evaluation
Session 8: Reality Acceptance Training (Plan B) and living in the direction of values according to the recurrence of the disease
Compassion-focused training is a treatment plan consisting of eight 90-minute training sessions based on the Gilbert training package [14]:
Session 1: Environmentalization, teaching the theoretical foundations of compassionate therapy in a simple word in the context of psychological problems of irritable bowel syndrome patients
Session 2: Teaching the nature of compassion to clients, training the mind focused on threats versus the compassionate mind (with emphasis on the unique problems of clients), teaching compassionate qualities, teaching compassionate skills
Session 3: Preparing and training the individual mentality
Session 4: Relationships
Session 5: Introducing the illustration model
Session 6: Illustration of a safe place
Session 7: Growing compassionate
Session 8: Compassion
Before the first session in the groups, the IBS-SI and DASS-42 were administered to the groups (pre-test). At the end of the sessions (eight sessions), the questionnaire was readministered to the group members (post-test). Two months after the end of the sessions, one session was performed as a follow-up on all three groups, and the symptoms of the individuals were measured and recorded. Therefore, pre-test and post-test scores, as well as the scores of the follow-up session, were statistically analyzed to evaluate the effectiveness of the independent variable in the groups.
Descriptive statistical methods, such as mean and standard deviation, and inferential statistical methods, such as mixed analysis of variance with repeated measures, were employed to analyze the data. Table 1 presents the demographic characteristics of the sample group.

Table 1. Demographic characteristics of the sample group

Variable	Preliminary group n=45	RT n=15	CFT n=15	Control n=15
Gender				
Female	26	9	9	8
Male	19	6	6	7
Age				
20-30	19	7	6	5
31-40	16	3	6	7
41-50	10	5	3	3
Education				
High School	9	3	5	4
B.A.	22	8	6	5
M.A. & upper	14	4	4	6

CFT: compassion-focused therapy, RT: Reality therapy

Results

As illustrated in Table 1, the sample consisted of 26 (58%) males and 19 (42%) females. According to Table 2, in the experimental group, the mean scores of depression, anxiety, stress, and physical symptoms of patients with irritable bowel syndrome decreased in the post-test and follow-up; nonetheless, in the case of the control group, there was no evidence of such a change. The significance of group differences with respect to pre-test, post-test, and follow-up scores was assessed by a mixed analysis of variance with repeated measures. Table 3 shows the results of the analysis of the variance of the main effects and the interaction between them.

As illustrated in Table 3, analysis of variance is significant for the intragroup factor of physical symptoms (time) and between groups. Moreover, the interaction of group effect and time is also significant (F=6.38, df = 4). According to the aforementioned findings, the main hypothesis of the research was confirmed, and reality therapy and compassion-focused therapy were effective in the physical symptoms of patients with irritable bowel syndrome. Furthermore, according to the results of the Bonferroni post hoc test in Table 4, physical symptoms in both experimental groups of reality therapy and compassion-focused therapy decreased in the post-test stage compared to those in the pre-test ($P<0.01$). Nonetheless, the comparison of the two experimental groups demonstrated that the variable scores of physical symptoms in the two experimental groups were not significantly different. Furthermore, in terms of psychological symptoms, the results in Table 3 indicate that analysis of variance is significant for the intragroup factor of depression (time) and between groups. In addition, the interaction of group effect and time is also significant (F=5.91, df=4). According to the above findings, reality therapy and compassion-focused therapy were effective in depression in patients with irritable bowel syndrome. Moreover, according to the results of the Bonferroni post hoc test in Table 4, depression in both experimental groups of reality therapy and compassion-focused therapy decreased in the post-test stage compared to that in the control group ($P<0.01$). Nevertheless, the comparison of the two experimental groups illustrated that the variable scores of depression in the two experimental groups were not significantly different.

Table 2. Descriptive characteristics of variables by group and test frequency

Variable	Pre-Test		Post-Test		Follow-up	
	SD	M	SD	M	SD	M
Depression						
RT	6.83	29.13	2.41	11.67	2.63	13.73
CFT	9.36	25.60	3.37	10.93	3.11	12.87
Control	7.49	30.33	9.66	27.40	6.69	25.07
Anxiety						
RT	11.11	28.73	2.40	8.93	2.75	10.87
CFT	9.39	25.87	2.50	8.87	2.58	10.73
Control	10.80	26.13	10.18	27.47	9.77	22.20
Stress						
RT	6.36	33.07	3.33	14.67	3.54	16.53
CFT	7.81	35.27	3.36	14.20	3.48	16.33
Control	7.11	33.00	6.73	31.80	6.66	28.13
Physical Symptoms						
RT	78.45	275.73	60.51	190.47	60.30	208.00
CFT	67.56	268.20	55.96	165.13	60.71	185.27
Control	68.70	264.33	77.28	307.73	77.89	284.33

CFT: compassion-focused therapy, RT: Reality therapy

Table 3. Analysis of variance with repeated measures to compare pre-test, post-test, and follow-up of symptoms in patients with irritable bowel syndrome

Variable	Source	Sum of Squares	df	Mean Square	F	Sig.	Eta Squared	Observed Power
Depression	Time	3913.35	2	1956.67	49.59	0.0001	0.54	1
	Time*Group	933.10	4	233.27	5.91	0.0001	0.54	1
	Error	3314.22	84	39.46				
	Group	3234.86	2	1617.43	36.60	0.0001	0.64	1
	Error	1855.91	42	44.19				
Anxiety	time	4373.51	2	2186.76	33.74	0.0001	0.45	1
	Time*Group	2033.91	4	508.48	7.85	0.0001	0.27	0.997
	Error	5443.91	84	64.81				
	Group	2788.31	2	1394.16	25.39	0.0001	0.55	1
	Error	2305.96	42	54.90				
Stress	time	5467.78	2	2733.89	121.42	0.0001	0.74	1
	Time*Group	1836.18	4	459.04	20.39	0.0001	0.49	1
	Error	1891.38	84	22.52				
	Group	2600.58	2	1300.29	25.38	0.0001	0.55	1
	Error	2151.42	42	51.22				
Physical Symptoms	time	63804.98	2	31902.49	8.09	0.001	0.16	0.95
	Time*Group	100708.89	4	25177.22	6.38	0.0001	0.23	0.987
	Error	331253.47	84	3943.49				
	Group	154728.40	2	77364.20	12.94	0.0001	0.38	0.995
	Error	251035.87	42	5977.04				

In addition, as displayed in Table 3, analysis of variance is significant for the intragroup factor of anxiety (time) and between groups; moreover, the interaction of group effect and time is also significant (F=7.85, df=4).

According to the above findings, reality therapy and compassion-focused therapy were significantly effective in the anxiety of patients with irritable bowel syndrome. In addition, according to the results of the Bonferroni post hoc test in Table 4, anxiety in both experimental groups of reality therapy and compassion-focused therapy decreased in the post-test stage compared to that in the control group ($P<0.01$). However, the comparison of the two experimental groups showed that the scores of the anxiety variable in the two experimental groups were not significantly different. Finally, the results of Table 3 indicate that the analysis of variance is significant for intragroup stress (time) and intergroup.

However, the interaction of group effect and time is also significant (F=20.39, df=4). According to the above findings, reality therapy and compassion-focused therapy were significantly effective in stress among patients with irritable bowel syndrome. Moreover, according to the results of the Bonferroni post hoc test in Table 4, the stress in both experimental groups of reality therapy and compassion-focused therapy decreased in the post-test stage compared to that in the control group ($P<0.01$).

Nevertheless, the comparison of the two experimental groups denoted that the variable scores of stress in the two experimental groups were not significantly different from each other.

Table 4. Results of Bonferroni post hoc test for the symptoms of patients with irritable bowel syndrome

Variable	Group	Group	Mean Difference	Sig.
Depression	RT	CFT	1.71	0.69
	RT	Control	-9.42	0.0001
	CFT	Control	-11.13	0.0001
Anxiety	RT	CFT	1.02	1.00
	RT	Control	-9.09	0.0001
	CFT	Control	-10.11	0.0001
Stress	RT	CFT	-0.51	1.00
	RT	Control	-9.56	0.0001
	CFT	Control	-9.04	0.0001
Physical Symptoms	RT	CFT	18.53	0.79
	RT	Control	-60.73	0.002
	CFT	Control	-79.27	0.0001

CFT: compassion-focused therapy, RT: Reality therapy.

Discussion

Irritable bowel syndrome, which is one of the most common and unknown disorders of gastrointestinal function, is associated with such mental disorders as acute depressive disorders, depressive mood, generalized anxiety disorders, panic, and physical disorders, especially self-morbidity [21]. Based on the results in Tables 2 and 4, reality therapy and compassion-focused therapy significantly reduced the mean scores of physical symptoms in patients with irritable bowel syndrome, and this decrease continued in the follow-up phase. These findings are consistent with the results of the studies by Seyed Jafari [22] and Naliboff [23]. There was also no significant difference between the effectiveness of reality therapy and compassion-focused therapy.

Furthermore, the assessment of other hypotheses focusing on psychological symptoms, as illustrated in Tables 2 and 4, reality therapy and compassion-focused therapy significantly reduced the mean scores of depression, anxiety, and stress in patients with irritable bowel syndrome. This decrease

continued in the follow-up phase. These findings are in accordance with the results of the studies by Xiao [24], Pashing [25], Khalifeh Soltani [26], and Jalalinia [27]. There was also no significant difference between the effectiveness of reality therapy and compassion-focused therapy. In explaining this finding, it can be stated that people with irritable bowel syndrome may choose depressive behavior, anxiety, stress symptoms, or physical symptoms to satisfy one or more of their basic genetic needs. As Glasser believes, all human beings are born with five genetic needs (the need for survival, love and belonging, power, freedom and fun) and all our behaviors are to meet these needs [20].

In reality therapy, clients are helped to identify their needs and find the best option to meet them. They are then helped to self-evaluate and see if this choice effectively meets their needs. If the answer is no, at this point, they are helped to find and use other options to meet their needs. In this regard, we have three options to stop painful behaviors, such as depression, anxiety, stress, and physical symptoms: Changing wants, changing our actions, or changing both. In the treatment process, it was clear that even when patients had severely chosen such behaviors as depression, anxiety, stress, and even physical symptoms, they were able to make better and more effective choices. In explaining the effectiveness of compassion-focused therapy in patients with irritable bowel syndrome, it can be stated that negative emotions are effective when the stimulus system is constantly stimulated. In such situations, the problem is caused by people's exessive attention to themselves, as well as their internal and external threats; therefore, it is not the content of cognition but the repetition of threat-focused thinking that is harmful. As a result, the redistribution of attention is a key element in compassion therapy.

Compassion therapy finds it useful to stimulate the natural regulator of the threat-protection system, the soothing system, satisfaction, and security. Therefore, compassion therapy suggests trying to change the direction of another emotional system to facilitate new processes. In such a context, compassion therapy reduces anxiety, depression, stress, and physical symptoms by freeing people from the shackles of internal stimuli, such as rumination, self-criticism, or anger, and focusing on compassionate insights and feelings. Moreover, it empowers people to compassionately distance themselves from inner emotional storms and observe emotions and thoughts as they occur [14].

Among the notable limitations of the present study, we can refer to the use of prescribed medications by patients with irritable bowel syndrome. It is suggested that the present study be performed with drug control, considering ethical considerations and comparing its effectiveness. Moreover, due to the effectiveness of reality therapy and compassion-focused therapy for the physical symptoms of patients with irritable bowel syndrome, gastroenterologists are recommended to refer such patients to health psychologists. Another practical suggestion is that the Ministry of Health considers the presence of a health psychologist as an essential member of the gastrointestinal treatment team and provides more effective treatment for such patients.

Conclusions

The findings of this study support the efficacy of RT & CFT in depression, anxiety, stress, and physical symptoms in patients with IBS. One of the limitations of the present study was that patients with IBS used medications prescribed by a physician. It is suggested to carry out the present study with drug control and take ethical considerations into account and compare its effectiveness. Moreover, due to the effectiveness of RT & CFT in the physical symptoms of patients with IBS, gastroenterologists are recommended to refer such patients to health psychologists in addition to prescribing medication (using the results of this research) to experience more effective treatment. It is suggested to add a psychologist to the treatment team of patients with digestive problems.

Compliance with ethical guidelines

This study was approved by the Ethics Committee of Tehran Islamic Azad University of Medical Sciences (ethics code: IR.IAU.TMU.REC.1399.237).

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Conflicts of Interest

The authors have no conflicts of interest to declare.

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