DOI: http://dx.doi.org/10.22122/ijbmc.v8i1.287 *Published by Vesnu Publications*

International Journal of Body, Mind and Culture

Comparison of the Effectiveness of Self-Efficacy-Based Training and Compassion-Focused Therapy on Depression, Self-Care Behaviors, and Quality of Life of Patients with Irritable Bowel Syndrome

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Quantitative Study

Abstract

Background: Irritable bowel syndrome (IBS) is the most common gastrointestinal disease. The present study was conducted to compare the effectiveness of self-efficacy-based training and compassion-focused therapy on depression, self-care behaviors, and quality of life (QOL) of patients with IBS.
Methods: The present study was a quasi-experimental research with a pretest-posttest design and a control group. The statistical population consisted of all patients with IBS referred to Khorshid Hospital in Isfahan city, Iran, between September and November 2019. The study participants were 45 patients with IBS, who were randomly divided into 2 equal-sized groups of intervention and control. The data were collected using the Beck Depression Inventory (Beck, 1988), the Self-Care Questionnaire (Alizadeh Aghdam, Koohi, & Gholizadeh, 2016), and the Quality of Life Scale (Ware & Sherbourne, 1992). The collected data were analyzed using multivariate analysis of covariance (MANCOVA) in SPSS software.
Results: The results indicated that self-efficacy-based training and compassion-focused therapy positively affected depression ($P < 0.001$), self-efficacy behaviors ($P < 0.001$), and QOL ($P < 0.001$) of patients with IBS. However, compassion-focused therapy was more effective in the treatment of depression and the improvement of self-care behaviors and QOL than self-efficacy-based training ($P < 0.001$).
Conclusion: It can be concluded that compassion-focused therapy was more effective in the treatment of depression and the improvement of self-care behaviors and QOL than self-efficacy-based training.
Keywords: Self-efficacy; Depression, Self-care, Quality of life, Irritable bowel syndrome

Citation: Afshar-Zanjani H, Khalifesoltani F, Hajializadeh K, Ahadi H. **Comparison of the Effectiveness of Self-Efficacy-Based Training and Compassion-Focused Therapy on Depression, Self-Care Behaviors, and Quality of Life of Patients with Irritable Bowel Syndrome.** Int J Body Mind Culture 2021; 8(4): 272-81.

Received: 20 Nov. 2020
Accepted: 25 Dec. 2020

Introduction

Irritable bowel syndrome (IBS) is the most common gastrointestinal disease; it is also the cause of 25% to 50% of cases referred to gastroenterologists. The results of previous studies suggest that anxiety and depression are very common among patients with IBS and that they are strongly associated with the onset and severity of other IBS symptoms. IBS is a health condition that mainly affects the large intestine (Tap et al., 2017). The large intestine is the final section of the gastrointestinal tract where feces are formed. The term syndrome implies the existence of a set of symptoms; thus, IBS produces a set of symptoms, including cramping, burping, gas, diarrhea, or constipation. Due to the lack of a specific biological basis, IBS is diagnosed based on the evaluation of clinical signs and symptoms. Therefore, patients with abdominal pain or discomfort for 12 weeks plus at least 2 of the 3 symptoms of pain relief after defecation, the onset of symptoms with changes in defecation frequency, or changes in stool shape are usually diagnosed with IBS (Rao, Yu, & Fedewa, 2015). Today, the quality of life (QOL) is considered an essential part of medical assessments of patients suffering from IBS. The QOL is a multidimensional concept covering issues such as physical health, mental health, economic status, personal beliefs, and the ways in which one interacts with his/her environment. Some studies have shown that IBS, as an independent factor, has a significant impact on patients' QOL (Woda, Belknap, Haglund, Sebern, & Lawrence, 2015). The QOL is considered a key multidimensional concept (including physical-psychosocial functioning) by patients with IBS. Issues such as long-term complications, reduced life expectancy, and increased risk of death cause a significant economic burden on patients with IBS and their families (Kauric-Klein, Peters, & Yarandi, 2017).

One of the important goals of IBS management is to empower patients in performing self-care behaviors (Lee, Shin, Wang, Lin, Lee, & Wang, 2016). IBS is a chronic disease requiring intensive lifelong self-care behaviors. Effective management of IBS requires the performance of complex self-care behaviors such as making lifestyle changes, controlling nutritional status, performing regular physical activity, using drugs, monitoring and recording blood sugar, and taking care of feet; moreover, the treatment outcome of diabetes is highly dependent on patients' self-care behaviors (Kauric-Klein et al., 2017). Self-care is affected by some important psychological factors such as anxiety and depression. Effective self-care behaviors improve QOL and reduce treatment costs. Moreover, self-care is influenced by individual beliefs/attitudes and the values and culture of the society in which one lives (Woda et al., 2015). Many studies have investigated the role psychological factors play in the incidence of IBS. It has been indicated that stress, anxiety, and depression are very common among patients with IBS and that such psychological conditions are strongly associated with the onset and severity of IBS symptoms (Ross et al., 2016). The role of psychological factors, especially depression, in the development or exacerbation of IBS requires greater attention because many studies have shown that biological predisposing factors of IBS can act as IBS risk factors in the presence of psychological factors associated with the incidence of IBS. Bai et al. (2015) have examined the relationships between psychosocial factors and IBS and have reported that subjects with IBS had higher levels of depression, anxiety, and neuroticism than healthy subjects. Pinto, Lele, Joglekar, Panwar, and Dhavale (2000) showed that 50% of patients with IBS suffer from anxiety and depression. Some of the

IBS patients referring to subspecialty centers suffer from anxiety, depression, morbid fear, and somatization. This group of patients rarely show other symptoms of a specific mental illness. Moreover, patients not seeking medical treatment for IBS cannot be distinguished from healthy individuals in terms of mental health problems (Fischer et al., 2015). Patients with IBS are more likely to report a history of physical or sexual abuse or a learned behavioral pattern during childhood. It has been reported that IBS patients show higher levels of neuroticism than healthy individuals (Belvederi et al., 2015).

According to previous studies, one of the most popular theories in predicting and explaining human behavior is Albert Bandura's Social Learning Theory (the Social Cognitive Theory); this theory is one of the most extensively used theories in studies on behavioral changes and cognitive processes (Woelber et al., 2016). A strong sense of self-efficacy is related to better health. Various factors can affect self-efficacy, for example, prior successes and failures, and the reactions others and their successes or failures. In the present study, the Self-Efficacy Theory, as one of the most important components of the Social Cognitive Theory, was applied in educational planning. Self-efficacy is considered an important prerequisite for behavioral change. It explains human behavior as interactions between the cognitive determinants of behavior and environment; therefore, it is very important and highly applicable in health education (Rodriguez Vazquez, 2021). There are various strategies for improving depression and self-care behaviors of patients with IBS; one of these strategies is the use of self-compassion-focused therapy. The basic principle of compassion-focused therapy implies that external thoughts, factors, images, and palliative behaviors should be internalized so that the human mind can calm down in the face of these factors as it responds to external factors (Kelly & Carter, 2015). High levels of self-compassion lead to improved social interactions and reduced levels of self-criticism, rumination, thought suppression, anxiety, and psychological stress (Feliu-Soler et al., 2017). Collins, Gilligan, and Poz (2018) have shown that self-compassion-focused therapy can reduce anxiety and depression in the elderly with dementia. Breines, Thoma, Gianferante, Hanlin, Chen, and Rohleder (2014) found that self-compassion-focused therapy positively affects people with psychological problems, including depression. The number of IBS patients is increasing and they have difficulties in dealing with depression and performing self-care behaviors; however, it seems that many IBS patients do not have sufficient knowledge and the required skills to manage such problems effectively. Such problems can be reduced through suitable education of IBS patients on the theory of self-efficacy and compassion-focused therapy. One of the most important reasons to conduct the present study was the lack of research resources on the effects of self-efficacy-based training and compassion-focused therapy on patients with IBS. A review of the literature revealed that a limited number of experimental and case-control studies have been conducted in Iran in this regard and that traditional therapies were used in those studies to improve the health status of patients with IBS. Using mindfulness exercises and techniques, compassion-focused therapy seeks to improve the self-esteem of individuals to help them better cope with the various problems they face (e.g., their illnesses), and self-efficacy-based training is used to improve people's observational learning and modeling skills. Thus, it can be said that these approaches look at issues from 2 different angles, indicating the importance of comparing them with each other. Therefore, the present study was conducted to compare the effectiveness of self-efficacy-based training and compassion-focused therapy on depression, self-care behaviors, and quality of life (QOL) of patients with IBS.

Methods

The present study was a quasi-experimental research with a pretest-posttest design and a control group. The statistical population consisted of all IBS patients referred to Khorshid Hospital in Isfahan city, Iran, between September and November 2019. The study participants were 30 eligible patients with IBS, who were randomly divided into 3 groups (First group: compassion focused therapy, Second group: self-efficacy based training) and a control group. Considering an effect size of 0.25, alpha of 0.05, and power of 0.80, the number of participants in each group was determined to be 15 individuals. The inclusion criteria included being diagnosed with IBS by a gastroenterologist according to Rome II diagnostic criteria and not receiving any form of psychological treatment over the past 3 months (North, Hong, & Alpers, 2007). The exclusion criteria were experiencing symptoms such as gastrointestinal bleeding, blood in the stool, and fever, and 10% weight loss over the last 6 months, a family history of colon cancer or severe psychiatric illnesses, and being first-degree relatives or neighbors of other patients. The intervention lasted 2 months. Each of the examined patients was randomly assigned to either the experimental group or the control group (15 patients in each group). Both groups of patients received routine treatment for IBS, but patients in the experimental group also participated in a compassion-focused therapy program designed in the form of an executive protocol. Thus, the experimental group received 4 sessions of compassion-focused therapy (a 90-minute session per week) and the control group did not receive any specific therapy in addition to the routine IBS treatment. Ethical principles were taken into consideration in this study. Therefore, the participants received written information about the research design and its purposes, and then, participated in the study voluntarily. They were assured that their information would remain confidential and only be used for research purposes. Names and surnames of the participants were not recorded to maintain their privacy. Moreover, to ensure the success of the research process, all questionnaires were administered by the researcher. In addition, the researcher was committed to performing the study intervention for the control group after the study.

This study received the ethical approval code IR.HUMS.REC.1398.311 from Hormozgan University of Medical Sciences, Iran, and the IRCT code IRCT20191217045761N1 from the Iranian Registry of Clinical Trials.

The Beck Depression Inventory: The Beck Depression Inventory (BDI) was developed by Beck in 1988 to evaluate the severity of depression. The BDI consists of 21 items; each item is scored based on a 4-point scale ranging from 0 to 3. The total BDI score is within the range of 0-63. Higher scores indicate greater depressive severity. The BDI cut-off score is 13. One-week test-retest reliability and Cronbach's alpha internal consistency of the BDI have been reported as 0.93 and 0.91, respectively (Beck, Steer, & Brown, 1996). Construct validity of the BDI has been evaluated by measuring its convergent validity; the correlation between the BDI-II and the short form of the Depression Syndrome Questionnaire was 0.87 (Beck et al., 1996). Mohammad-Khani, Dobson, Massah-Choolaby, and Asari (2011) have reported a Cronbach's alpha of 0.90 for the BDI.

The Self-Care Questionnaire: A 13-item questionnaire, developed by Alizadeh Aghdam, Koohi, and Gholizadeh (2017), was used to assess the participants' level of self-care. The subscales of the questionnaire include healthy eating, physical activity, stress management, smoking behavior, awareness, and responsibility for one's health status. Each item is scored on a 5-point Likert scale ranging from 1 to 5. The questionnaire's possible scores are within the range of 13-65. Scores in the range of 13-29, 31-47, and higher than 48 indicate poor self-care, moderate self-care, and good self-care, respectively.

Concurrent validity and Cronbach's alpha internal consistency of the questionnaire have been reported as 0.78 and 0.83, respectively (Alizadeh Aghdam et al., 2017).

The Quality of Life Scale: 36-item Short-Form Health Survey (SF-36): This scale, developed by Ware and Sherbourne (1992), is a self-report scale mainly used to assess health-related QOL. The QOLS contains 36 items assessing the 8 domains of physical functioning, social functioning, physical role-play, emotional role-play, mental health, vitality, bodily pain, and general health. Respondents' scores in each of the mentioned domains vary between 0 and 100, and higher scores in each domain indicate higher levels of QOL in that specific domain. The validity and reliability (Cronbach's alpha) of the original version of the QOLS have been reported as 0.77 and 0.80, respectively (Ware & Sherbourne, 1992). Both the validity and reliability of the Persian version of this scale have also been confirmed by Jafari, Lahsaeizadeh, Jafari, and Karimi (2008). Moreover, they have reported that the internal consistency coefficients and 1-week test-retest reliability coefficients of the QOLS subscales are within the range of 0.70-0.85 and 0.43-0.79, respectively.

Compassion-focused therapy was performed in 10 weekly 60-minute sessions (1 session per week) based on Gilbert's training package. The validity of this protocol has been confirmed by its developers; they have shown that the package has high face and content validity (Gilbert, 2009). Using lectures, question and answer, group discussions, and individual counseling, the self-efficacy-based training was conducted in 5 weekly 60-minute training sessions in the experimental group.

The collected data are presented using frequency tables, and central tendency and dispersion indices (e.g., mean and standard deviation) were also calculated. The collected data were analyzed using multivariate analysis of covariance (MANCOVA). To test the study's hypotheses, Levene's test (assessing the homogeneity of variances), Kolmogorov-Smirnov test (checking the normality of data), Box's M test, and Mauchly's sphericity test were applied. The Bonferroni post hoc test was also applied to compare average measurement times two-by-two. To compare gender, marital status, age group, and education level between the 2 groups, the chi-square test was used. All statistical analyses were performed in SPSS software (version 22; IBM Corp., Armonk, NY, USA). All P-values < 0.05 were considered significant.

Results

Descriptive results of the present study (i.e., means, standard deviations (SD), number of samples, and frequency distributions, and percentages) are presented in the following tables (Table 1 and 2).

Table 1. Frequency distribution of the participants' demographic characteristics

Demographic variables		Self-efficacy-based training n(%)	Compassion-focused therapy n(%)	Control n(%)	P-value
Gender	Female	6 (40)	11 (73.3)	4 (26.7)	0.33
	Male	9 (60)	4 (26.7)	11 (73.3)	
Marital Status	Single	0 (0)	0 (0)	1 (6.7)	1.00
	Married	15 (100)	15 (100)	14 (93.3)	
Age (year)	< 30	1 (6.7)	2 (13.3)	0 (0)	0.43
	30-39	10 (66.7)	13 (86.7)	10 (66.7)	
	40-49	4 (26.7)	0 (0)	5 (33.3)	
Education Level	Illiterate	1 (6.7)	1 (6.7)	0 (0)	0.08
	High School students	11 (73.3)	12 (80.0)	14 (93.3)	
	Associate Degree	2 (13.3)	0 (0)	0 (0)	
	Bachelor's Degree	1 (6.7)	2 (13.3)	1 (6.7)	

Table 2. Measures of central tendency and dispersion of the participants' scores on the study's variables

Variable	Group	Pre-test	Post-test	Follow-up
		Mean ± SD	Mean ± SD	Mean ± SD
Self-care Behaviors	Self-efficacy training	28.06 ± 4.43	31.80 ± 4.31	31.13 ± 4.42
	Compassion-focused therapy	31.00 ± 3.81	36.66 ±3.95	35.93 ± 3.69
	Control	30.60 ± 4.13	31.26 ± 4.00	31.46 ± 3.96
	Self-efficacy training	159.86 ± 4.74	165.53 ± 4.12	164.80 ± 4.02
	Compassion-focused therapy	158.00 ± 6.36	167.40 ± 6.00	166.40 ± 5.94
	Control	160.00 ± 4.59	160.53 ± 4.70	160.46 ± 4.77
Depression	Self-efficacy training	13.66 ± 1.29	11.60 ± 1.18	12.06 ± 1.38
	Compassion-focused therapy	13.33 ± 1.23	9.73 ± 1.27	10.33 ± 1.54
	Control	12.73 ± 1.27	12.20 ± 1.26	12.80 ± 1.20

SD:Standard deviation

To determine the statistical significance of the difference in depression, QOL, and self-care scores between the 3 study groups (self-efficacy-based training, compassion-focused therapy, and control), MANCOVA was applied. To meet the study assumptions, the results of Box's M test and Levene's test were checked before performing MANCOVA. The Box's M test was not significant for any of the study variables (Box's M = 10.99; df = 12; P > 0.05), so the assumption of homogeneity of variance-covariance matrices was correctly met. The non-significance of all the variables in Levene's test showed that the assumption of intergroup variance equality was also met and that the amount of dependent variable error variance was equal in all groups.

The results showed that the 3 groups of self-efficacy-based training, compassion-focused therapy, and control differed statistically in terms of depression, QOL, and self-care behaviors. It is worth mentioning that the results of Wilks' Lambda test (0.06) and F-test (34.67) indicated significant differences between the 3 groups of self-efficacy-based training, compassion-focused therapy, and control in terms of depression, QOL, and self-care behaviors (P < 0.0001).

As shown in table 3, the F-test results were statically significant for the variables of depression (F = 120.68; P < 0.001), QOL (F = 89.24; P < 0.001), and self-care behaviors (F = 68.18; P < 0.001). These results confirmed the seventh hypothesis of the present study. Bonferroni post hoc test was used to perform pairwise comparisons between groups.

The results presented in table 4 show that the mean posttest scores of QOL and self-care behaviors in the compassion-focused therapy group were higher than those in the self-efficacy-based training and control groups (P < 0.01). In other words, compassion-focused therapy had a greater impact on the study's variables than self-efficacy-based training (P < 0.01). Moreover, the mean posttest depression score was lower in the compassion-focused therapy group compared to the self-efficacy-based training group (lower scores indicated lower levels of depression) (P < 0.01). In other words, compassion-focused therapy had a greater impact than self-efficacy-based training on the study's variables (P < 0.01).

Table 3. Comparison of pretest and posttest scores in the experimental groups using multivariate analysis of covariance

	Source of Effect	SS	df	MS	F	P-value.	Eta Squared
Group	Depression	65.59	2	32.79	120.68	0.0001	0.86
	Quality of Life	503.30	2	251.65	89.24	0.0001	0.77
	Self-care Behaviors	181.84	2	90.92	68.18	0.0001	0.77

SS: Sum of squares; df: Degree of freedom; MS: Mean of squares

Table 4. Bonferroni post hoc test results of comparing research variables

Variables	Group	Group	MD	P-value
Quality of Life	Self-efficacy-based training	Compassion-focused therapy	-3.61	0.001
		Control	4.86	0.001
	Compassion-focused therapy	Control	8.47	0.001
Self-care Behaviors	Self-efficacy-based training	Compassion-focused therapy	-2.17	0.001
		Control	2.92	0.001
	Compassion-focused therapy	Control	5.09	0.001
Depression	Self-efficacy-based training	Compassion-focused therapy	1.67	0.001
		Control	-1.38	0.001
	Compassion-focused therapy	Control	-3.06	0.001

MD:Mean difference

Discussion

The present study was conducted to compare the effectiveness of self-efficacy-based training and compassion-focused therapy on depression, self-care behaviors, and QOL of patients with IBS. The results showed that compassion-focused therapy had a greater impact than self-efficacy-based training on the study's variables. This result was in line with that of the studies by Shiralinia, Cheldavi, and Amanelahi (2018), Manzari Tavakkoli (2016) Noorbala, Borjali, and Noorbala (2013), Collins et al. (2018), and Beaumont and Hollins Martin (2016). To explain this finding, it can be said that compassion-focused therapy is directed towards people with psychological problems, and those who tend to overuse their threat systems, which results in higher levels of stress and arousal. These people also experience lower levels of satisfaction and are less settled. Compassion-focused therapy helps these people reduce their negative emotions and levels of arousal by stimulating their soothing system.

Cultivating a compassionate mind technique, as part of the compassion-focused therapy, helps people develop a non-judgmental attitude, so they can develop a non-judgmental compassionate attitude towards all pleasant and unpleasant matters and become aware that failures and mistakes are inseparable parts of life (Collins et.al, 2018). By developing such an attitude and adjusting their expectations of themselves and their life, they can enhance their levels of satisfaction, become more settled, and experience lower levels of stress. Another component of compassion-focused therapy is mindfulness. Using this technique, one learns to experience the present moment and temporarily free oneself from negative attitudes and thoughts resulting from concerns about the future. The mindfulness technique breaks the rumination cycle and plays an important role in improving depression symptoms, self-care behaviors, and QOL of patients with IBS (Lewis, et al, 2015). People with higher levels of self-compassion experience lower levels of depression and anxiety in challenging social situations and higher levels of satisfaction with life. Moreover, previous studies showed that more compassionate people are more courageous in dealing with negative events and show less emotional and negative self-assessments when asked to recall their past failures (Beaumont & Hollins Martin, 2016)

It can also be said that most IBS patients have experienced primary emotional reactions and have suffered a great deal to get rid of those negative feelings and emotions; this problem leads to less effective emotional management, higher levels of stress, increased side effects of therapeutic methods, and exacerbation of physical symptoms. Self-compassion helps patients gain broader perspectives on their

problems, consider life challenges and personal failures as parts of their lives, interact more with others instead of thinking about their problems and feeling isolated, and enhance their awareness instead of suppressing, judging, or avoiding their thoughts, emotions, and feelings. These factors help patients be more open and able to change their behaviors and use more effective coping strategies, which then lead to a lower incidence of uncompromising emotional states such as anxiety, depression, and stress (Pinto et al., 2000).

The IBS patients in the present study experienced better feelings (instead of being under stress or judgmental about their health conditions) during the compassion-focused therapy sessions that included components such as self-kindness, human commonalities, and mindfulness. Furthermore, members of the compassion-focused therapy group suffered from IBS and experienced the stress associated with different stages of the diagnosis process; thus, they were less likely to attribute the problem to themselves and, despite the commonness of the negative feelings, few of them associated these feelings with their inadequacies. Moreover, most patients avoided pain and emotional problems; therefore, by keeping the pain and suffering of the disease and the treatment process in their own consciousness, they neither distanced themselves from it nor denied its existence. Therefore, it is possible for those IBS patients who suffer from high levels of stress during the treatment process and even when visiting the doctors to continue their normal life and experience many positive psychological changes despite these negative emotions and feelings. The levels of anxiety and frustration of patients in the compassion-focused therapy group were more effectively reduced than those in the self-efficacy-based training group (Lewis, et al, 2015).

Like any other research, the present study had its limitations. Enumerating the limitations of this study can help other researchers take effective measures to deal with the threats to internal and external validity of future research projects. A limitation of the present study was that the results of this study were limited to IBS patients. The present study was conducted on the population of IBS patients in Isfahan city; therefore, caution must be exercised when generalizing its results to other contexts. It is recommended that similar studies be conducted on other sample groups/in different cities and their results be compared with those of the present study. The addition of follow-ups (such as individual counseling) after performing group therapy is also suggested. Considering the positive effects of self-efficacy-based training and compassion-focused therapy on depression symptoms, self-care behaviors, and QOL of patients with IBS, psychologists are recommended to use self-efficacy-based training and compassion-focused therapy in the treatment of IBS patients. By conducting training workshops based on self-efficacy-based training and compassion-focused therapy, the Ministry of Health, Welfare Organization, hospitals, and Psychology and Counseling Organization can provide the grounds for psychologists, physicians, and nurses to become more familiar with the concepts of these two therapeutic approaches.

Conclusion

It can be concluded that compassion-focused therapy was more effective in the treatment of depression and the improvement of self-care behaviors and QOL than self-efficacy-based training.

Conflict of Interests

Authors have no conflict of interests.

Acknowledgments

The authors wish to thank all those who participated in this study.

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