Effectiveness of Self-compassion Group Training on the Reduction of Anxiety, Stress, and Depression in Type 2 Diabetic Patients

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Abstract

Introduction: Type 2 diabetes is one of the common acute diseases that should be controlled; otherwise, it leads to inevitable consequences for the patient. The aim of the present study was to evaluate the effect of self-compassion training on the reduction of anxiety, stress, and depression of patients with type 2 diabetes referring to the Taleghani Diabetes Clinic in Kermanshah City.
Methods: In the present semi-experimental study, 20 types 2 diabetes patients referring to the Taleghani Diabetes Clinic in Kermanshah City were enrolled through a simple randomized sampling method in 2017. The selected subject was divided into two treatment and control groups (10 subjects in each group). The treatment group participated in a self-compassion training class for 8 sessions (90 min), but the control group did not receive any training. In order to collect data, Depression Anxiety Stress Scales (DASS) was used. In addition, to analyze data, ANOVA and t-test methods were done using SPSS V.22 software.
Results: The results showed that in the treatment group, the mean score of anxiety, stress, and depression was significantly reduced compared to the control group (P<0.001).
Conclusion: In diabetic patients, self-compassion group training is one of the effective method on the reduction of anxiety, stress, and depression. Therefore, it is suggested employing self-compassion group training method to the reduction of anxiety, stress, and depression in patients suffering from type 2 diabetes by therapists, counselors, and psychologists.

Keywords: Self-compassion Training, Depression, Anxiety, Stress, Type 2 diabetes

Introduction

Diabetes is one of the most common metabolic diseases in the world which usually comes along with a high blood glucose level (hyperglycemia). Annually, 4 million deaths occur by this illness, which accounts for 9% of all deaths worldwide [1]. Type 2 diabetes is an acute disease with an ever-increasing growth rate. The environmental and genetic factors such as inactivity, type of diet, family history, insulin resistance, and dysfunction of β cells involve the occurrence of this disease [2]. Diabetic patients not only have physical problems, but also experience emotional problems such as depression, anxiety, and aggression [3]. All these problems increase family conflicts, thereby decreases the mental adjustment, life quality, mental and physical health, and metabolic control in diabetic patients [4]. Depression is a periodic disorder with frequent recurrence, which is along with sudden or persistent sadness, lack of sense of pleasure from daily activities, agitation, and symptoms associated with some negative thoughts, energy shortages, difficulty in concentration and disrupted sleep, and lack of appetite [5]. Depression also leads to reducing energy and interest, feelings of guilt, the problem in concentrating, lack of appetite, thoughts of death and suicide, insomnia and hypersomnia, and dysfunction [6]. Depression in diabetic patients can be induced by difficulty in adaptation with diet, limitation of social life, repetitive blood tests, insulin infusion, lack of consciousness, and other complications of diabetes control [4].

As diabetes is along with depression, it makes the prognosis of diabetes worst and has undesirable consequences for diabetic patients [7].

The results of Pertak et al. (2015) indicated that supportive psychotherapy in diabetic patients results in the reduction of depression and helps to deal with the crisis caused by social problems or physical complications of diabetes [8].

Hospitalization, physical complications, and shock induced by decreasing the blood glucose level can impose stress on diabetic patients. Increased stress and worry increase the risk of depression and anxiety so that the more threatening the risk of diabetes and lower the potential of dealing with it leads to more increase in the risk [9]. Anxiety is a generalized, vague, and unpleasant feeling with symptoms such as headache, sweating, palpitations, dyspnea, and stomachache. Anxiety is an alert, which means that the person is aware that there is a danger that makes the person able to deal with the danger [10]. Ebrahimpour et al. reported that one of the challenges facing diabetic children and their parents is the anxiety induced by insulin infusion, which threats their mental and physical health [11].

Stress is an effective factor in inducing or increasing chronic disease complications. Moreover, based on physiological findings, stress links mental and physical health [12]. The effect of stress on the body starts with physiological and psychological stimulants that lead to activation of Hypothalamus-Pituitary-Adrenal (HPA). HPA plays an important role in body metabolism and blood glucose level regulation [13].

Studies show the necessity of self-care intervention to reduce the psychological problems in diabetic patients, prevent psychological disorders and diabetes complications, reduce the costs, and improve metabolic control [14]. As a result, psychotherapy interventions play a key role in reducing anxiety and stress in diabetic patients, consequently controlling the disease and preventing its complications. Therefore, one of the effective treatments used in a wide range of disorders is self-compassion training. Self-compassion training is defined as accepting the vulnerable emotions, care, and kindness towards oneself, perceiving, understanding, and having non-evaluative attitudes toward failures, and recognizing the common experiences of the individual [15]. Individuals do self-care activities to enhance their health, prevent the disease, limit the illness, and maintain their health [16]. Learning self-care and self-kindness activities can increase individuals' health and welfare, as well as disease adjustment [17].

Two of the main aims of the self-compassion includes the reduction of self-made hostility and developing individual abilities to form self-assurance, kindness, and self- palliative, which can be as an antidote against feeling threatened. The main part of self-compassion is based on forming the self-compassion ability [18].

The results of a study indicated that in patients suffering from a mood disorder, self-compassion comes along with mental health [19]. Besides, a one-month self-compassion training course leads to decreasing self-criticizing, depression, rumination, suppression of thoughts and anxiety, as well as increasing feelings of interpersonal communication with others [20]. MacBeth and Gumley revealed that higher levels of self-compassion shows lower levels of disease symptoms [21]. Krieger et al. (2013) found a negative association between self-compassion and depression, except for human sharing components, in two depressed and normal patients [22]. Diedrich et al. (2014) showed that individuals under self-compassion training experienced a higher reduction in depressive mood compared to the control group [23]. Higher self-compassion associates with lower depression, anxiety, and it acts as a powerful mental health predictor and mediator [24]. Self-compassion has a negative association with lower depression and anxiety. They also mentioned that self-compassion is a potential protector against emotional problems such as depression. Moreover, individuals who are not kind with themselves in diseases and difficulties, they always judge and blame themselves and feel more isolated, which leads to dealing with severe mental problems such as anxiety and depression [25].

The results of the present research revealed that self-compassion training resulted in a decrease in depression [26]. Gholpour et al. found that self-compassion training is effective in life quality, adaptive, social performance, and depression [27]. Since the chronic nature of diabetes physically and mentally affects the individual and social performance of patients, the identification of depression, anxiety, and stress level, as well as employing effective psychotherapy methods is of central importance. In diabetic patients, depression, anxiety, and stress result in delaying treatment or selecting unusual treatment methods; hence treating depression, anxiety, and stress in these patients is the main part of the patient's treatment and should begin in the first step. Given that in self-compassion training, individuals are taught to understand their own painful feelings and experiences and have compassion towards them. Besides, since compassion attribute is high in diabetic patients, the treatment effectiveness distinguishes the self-compassion method from other psychotherapy approaches.

According to the literature review and to the best of our knowledge, no similar studies have been performed on this population; therefore, the present study was carried out to evaluate the effectiveness of self-compassion group training on the reduction of anxiety, stress, and depression in diabetic patients in Kermanshah City.

Method

The present pre-/post-test research was carried with a control group and a follow-up step. The statistic population of the study included diabetic patients referring to diabetes centers of Kermanshah City in 2017. Among these patients, 62 objects were selected via available sampling and based in inclusion and exclusion criteria (Inclusion criteria included patients aged between 33 and 52 years, at least 1-month history of type 2 diabetes, at least having primary education, tendency to participate in the study, and receiving no individual counseling out of therapeutic sessions. Moreover, the

exclusion criteria of the present study were being diagnosed with psychiatric disorders based on a clinical interview and having a physical illness that could change the results of the research). Then, the selected objects completed the DASS questionnaire and 32 patients with high depression, anxiety, and stress levels were enrolled. Next, 20 subjects were selected via randomized sampling and were divided into a treatment and a control group (10 subjects in each group). The training sessions were held for treatment group 2d/wk (eight 90-min sessions) and no intervention was done on the control group (Table 1). At the end of the course, the DASS questionnaire was completed by both groups. In addition, in a follow-up step, one month after intervention the DASS questionnaire was completed and the results were compared with those of the post-test. In the present research, the Depression Anxiety Stress Scale (DASS) was used, which was introduced by Lovibond and Lovibond in 1995. The short form is based on a 4-point Likert scale to measure the constructs of depression, anxiety, and stress by 7 items [28]. Antoni et al. performed an Exploratory Factor Analysis (EFA) on DASS and determined α coefficient for depression, anxiety, and stress to be 0.97, 0.92, and 0.95 respectively [29]. In Iran, the validity and reliability of the scale were confirmed through different studies. For example, the reliability of the scale was tested for depression, anxiety, and stress in Mashhad City (400 subjects) and it was reported to be 0.70, 0.66, and 0.76, respectively [28]. Therefore, based on the reported coefficients, the questionnaire is validated. Finally, the questionnaire data were entered to the SPSS 23 software and multivariate covariance analysis was used to analyze the data.

Results

The sample size of the present research was 20 subjects (10 patients in each group). The mean age and standard deviation of subjects in the treatment and control group were 44.37± 6.726 (33 to 52 years old) and 44.38± 5.521 (31 to 50 years old) respectively. Besides, in terms of education, in the treatment and control group, 40% and 50% of subjects had a university degree, respectively. In addition, the number of married subjects were 9 and 8 in the treatment and control group respectively.

Table 2 shows the descriptive indices of depression, anxiety, and stress in the treatment and control groups. As seen, in the treatment group, the mean values of these three variables were reduced in post-test and follow-up. Moreover, the normality of each variable at a p-value of 0.05 was evaluated using the Shapiro-Wilk test. In addition, M-box test showed the equivalence of covariance matrices of post-test and follow up scores of depression, anxiety, and stress between control and treatment group. The obtained value was F=1.059, which was not significant at p<0.05. Accordingly, the assumption of the equality of the observed covariance matrices of the dependent variable was confirmed (Sig=0.388).

The F value of post-test for depression, anxiety, and stress were 0.499, 0.621, and 1.537, respectively. However, the F value of follow-up for those variables were 0.539, 1.362, and 3.278 respectively and it was not significant at 0.05. Therefore, the homogeneity of the variance of these three variables in both the control and treatment group was confirmed.

Table 1. The training steps and the contents of the training sessions

Steps	The contents of the training sessions
1	Evaluation of life expectancy, description, and explanation of life expectancy and factors related to its signs, conceptualization of cognitive self-compassion training and expressing the aim of training
2	Self-care training: to increase self-perception for following the affairs with compassion
3	Compassion training: to form more and variable feelings associated with other problems to increase the care and consider health
4	Forgiveness Training: to accept errors and forgive yourself for accelerating making the changes
5	Acceptance training: to accept the following changes and the ability to bear difficult and challengeable conditions.
6	Growing the valuable feeling training: to form valuable feelings to have an efficient relationship with the environment.
7	Responsibility training: it is the main component of self-compassion training, in which subjects learn to have self-critical thinking to make new and more efficient feelings.
8	Skill training: reviewing and practicing in the last sessions to help subjects to deal with different conditions of life through different methods.

Table 2. The descriptive indices of depression, anxiety, and stress

Variable	Test	Number	Control group		Treatment group	
			Mean	SD	Mean	SD
Depression	Pre-test	10	۱۷.۱	۲.۸	۱۷.۵	۱.۴
	Post-test	10	۱۶.۵	۲.۹	۱۰.۲	۲.۲
	Follow-up	10	۱۶.۸	۲.۶	۱۰.۸	۱.۷
Anxiety	Pre-test	10	۱۷.۶	۱.۵	۱۷.۳	۱.۳
	Post-test	10	۱۷.۰	۱.۳	۹.۵	۲.۱
	Follow-up	10	۱۷.۳	۱.۱	۹.۹	۱.۱
Stress	Pre-test	10	۱۸.۳	۲.۴	۱۸.۰	۱.۴
	Post-test	10	۱۸.۲	۳.۱	۱۲.۳	۲.۰
	Follow-up	10	۱۸.۲	۲.۶	۱۲.۶	۱.۸

As seen in Table 3, the results of 4 multivariable test of Pillai's Trace, Wilks' Lambda, Hotelling's Trace, and Roy's Largest Root were significant for post-score scores at the level of p<0.01. It shows that the independent variable of the group is significant at least in one of the post-test, follow up, depression, anxiety, and stress.

According to Table 4, in the source of variations, the F value in the post-test and follow up was 40.763 and 79.099 for depression variable, 98.050 and 391.258 for anxiety, and was 72.953 and 74.340 for stress respectively (P<0.05). Hence, the hypothesis of zero is rejected and the assumption of the research based on the significant differences between the mean post-test and the follow up for depression, anxiety, and stress in the control and treatment groups is accepted. According to Table 2, the mean post-test values and follow up of these three variables in the treatment group are less than the control group. As a result, self-compassion training was effective in reducing depression, anxiety, and diabetic stress.

Discussion

Diabetes is one of the most common chronic diseases that can lead to an increase in depression, anxiety, and stress. Therefore, it is possible to use self-compassion training method to reduce depression, anxiety, and stress in diabetic patients. The results of the present study indicated that physiological interventions could also be considered as the main part of chronic disease treatment. Since chronic diseases depend on "continuous care" and that "cure" is not a quick procedure in this diseases, one of the important parts of treatment is proper management of emotions, appropriate behavioral follow-up of treatment guidelines and addressing health behaviors and avoiding (or high-risk) health decreasing behaviors.

The results of the present study revealed that self-compassion training reduces anxiety and stress levels of diabetic patients.

Pace et al. reported the effect of self-compassion on behavioral and neuroendocrine responses against psychosocial stress [30], Wren et al. showed the relationship of self-compassion to adjustment to persistent pain [31], and Neff and Gremer confirmed the efficiency of self-compassion training on mental health and life quality [32]. All these results were in agreement with those of the present research.

Furthermore, the results of the studies demonstrated that response to negative emotions such as stress, anxiety, and failure in diabetic patients associates with the progress of diabetes and also the overlapping of the disease with mental disorder-stress and depression- is significantly high [33].

Diabetes can be an important source of stress and anxiety, because, it leads to the occurrence of significant changes in diabetic patients' lifestyle and their diet, as well as forcing them to have routine checkups [34]. Besides, anxiety and stress have a negative effect on health, especially in diabetic patients, and they can directly affect diet, exercise, self-management behaviors, and control of diabetes. Hence, stress management improves long-term glycemic control in type 2 diabetes [35]. As a result, it is necessary to perform interventions to reduce stress and anxiety in diabetic patients. One of the most important psychological interventions in diabetic patients is psychosocial support such as self-compassion group training [36]. Self-compassion training results in increasing welfare by decreasing negative emotions [37].

According to the results of the present study, self-compassion training has a significant effect on the depression of diabetic patients.

The results of the present research is in agreement with those of Zareh [26], Gholpour et al. [27], Veickarami et al. [38], Petrak et al. [8], Diedrich et al. [23], MacBeth et al. [21], Breines et al. [39], and Neely et al. [20]. Results show a significant relationship between diabetes and the incidence of depression [40, 41]. For diabetic patients, it is always difficult to accept to change their lifestyles in accordance with their illness. As these patients often know the short-term and long-term complications of the disease, emotional reactions such as depression are more prevalent [42]. Besides, controlling blood glucose in depressed patients is more difficult than healthy people, and prophylactic and prescriptive treatment can prevent diabetes recurrence and help prevent debilitating

Table 3. Multivariable tests, the effect of the independent variable of the group on post-test scores

Effect	Index	Value	F	Degree of freedom	The degree of freedom error
group	Pillai's Trace	۰.۹	۵۷.۷**	۶	۱۰
	Wilks' Lambda	۰	۵۷.۷**	۶	۱۰
	Holtelling's Trace	۳۴.۶	۵۷.۷**	۶	۱۰
	Roy's Largest Root	۳۴.۶	۵۷.۷**	۶	۱۰

** Significance at 0.01

Table 4. covariance analysis of comparing mean post-test, follow up, depression, anxiety, and stress in both control and treatment group

Source of variations	Variable	Test	Sum of square	Degree of freedom	mean square	F	Eta coefficient	Power of test
Group	Depression	Post-test	۱۹۸.۵	۱	۱۹۸.۵	۴۰.۷**	۰.۷	۱.۰
		Follow-up	۱۸۵.۱	۱	۱۸۵.۱	۷۹.۰**	۰.۸	۱.۰
	Anxiety	Post-test	۲۶۴.۵	۱	۲۶۴.۵	۹۸.۰**	۰.۸	۱.۰
		Follow-up	۲۶۱.۴	۱	۲۶۱.۴	۳۹۱.۲**	۰.۹	۱.۰
	stress	Post-test	۱۵۵.۰	۱	۱۵۵.۰	۷۲.۹**	۰.۸	۱.۰
		Follow-up	۱۳۹.۸	۱	۱۳۹.۸	۷۴.۳**	۰.۸	۱.۰

** Significance at 0.01

complications [43]. Breines et al. found that cognitive self-compassion training-based treatment plays an important and effective role in reducing psychological problems such as depression [39]. Therefore, it can be concluded that self-compassion training results in increasing the positive features such as logical self-perception, patience, tolerance, emotional balance in difficulties, and remembering that bad things can happen to all people, as well as decreasing the negative features and prevent depression [44]. In fact, self-compassion training sessions can be both a protective factor in preventing depression and improve it through the spread of compassion, kindness, and affection for oneself and others and acceptance of their negative aspects and disastrous events of life. In addition, the relationship of self-compassion with important psychological variables such as happiness and well-being can be a key point in understanding the negative relationship between this variable and depression [45].

In the present study, one of the limitations was the lack of long-term follow-up and inaccessibility to a large number of samples that makes the generalization of results difficult. Therefore, it is recommended that researchers consider the mentioned points in their future studies and select another region with a higher sample size. In the end, it is suggested identifying diabetic patients with low mental health by psychotherapists and inviting them to self-compassion training meetings.

Conclusion

The results of the present study revealed that self-compassion training significantly reduced depression, anxiety, and stress in patients with type 2 diabetes.

Acknowledgment

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