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Effectiveness of Self-compassion Training in Psychological Symptoms and Self-care in Patients with Type 2 Diabetes

Ali Mozaffaripour[1], Mohammad Ebrahim Madahi[1,2*], Maryam Kalhornia Golkar[1,3]

[1]Department of Health Psychology, Kish International Branch, Islamic Azad University, Kish Island, Iran
[2]Department of Clinical Psychology, Shahed University, Tehran, Iran
[3]Department of Psychology, Karaj Branch, Islamic Azad University, Karaj, Iran

***** ***Corresponding author:*** Mohammad Ebrahim Madahi, Department of Health Psychology, Kish International Branch, Islamic Azad University, Kish Island, Iran. Department of Clinical Psychology, Shahed University, Tehran, Iran. Email: memadahi@yahoo.com

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Abstract

Background: Diabetes mellitus is a common metabolic disorder that involves several organs, leading to chronic vascular and non-vascular complications.

Objectives: The present study aimed to assess the effectiveness of self-compassion training in psychological symptoms and self-care in patients with type 2 diabetes.

Methods: This semi-experimental study was conducted based on a pre-test post-test control group design The statistical population of the study consisted of all patients with type 2 diabetes from diabetes association and hospitals in Gilangharb in 2020, among whom 30 patients (self-compassion training and control group) were selected via the convenience sampling method. Data were collected using Psychological Symptoms Questionnaire and Tobert and Glasgow self-care questionnaires. Data were analyzed in SPSS software (version 24) using multivariate and univariate analysis of covariance tests.

Results: The results demonstrated that self-compassion training was effective in psychological symptoms (P<0.01) and self-care (P<0.01) in patients with type 2 diabetes.

Conclusion: As evidenced by the obtained results, it can be concluded that self-compassion training was effective in psychological symptoms and self-care in patients with type 2 diabetes and it can be effective as an efficient treatment method to improve psychological problems in these patients.

Keywords: Diabetes mellitus, Self-care, Self-compassion

1. Background

Diabetes mellitus is a common metabolic disorder that affects many organs, leading to chronic vascular and non-vascular complications (1). It is acknowledged as the sixth leading cause of death and the top cause of disability in the United States as a result of these persistent and catastrophic complications (2). The prevalence of type 2 diabetes, which is a very costly disease, is growing rapidly in human societies (3). With the increasing prevalence of diabetes mellitus worldwide, it is expected that this disease will remain one of the leading causes of morbidity and mortality (4). However, the acute and chronic complications of this disease can be prevented or delayed with timely identification and proper care based on patients' education and self-care (5).

Lack of self-care is the primary underlying cause of death in diabetic patients, according to current studies (6). Diabetes leads to numerous physical, biological, psychological, social, and economic consequences for patients and their families, as well as society. Diabetes exerts multidimensional effects on people; nonetheless, the present study restricted its scope to the psychological effects of diabetes. Psychological complications have characteristics that according to the psychological orientation of the educational and therapeutic approaches of the present study, there is a concordance between the approaches and the attitude towards diabetes.

Diabetes affects the quality of life of affected individuals and their families. This disease threatens the identity of people with annoying symptoms and society's negative perception, which is associated with labeling the infected people and reduces their mental health by expressing negative emotions (7). Quality of life has been exacerbated by the incidence and prevalence of diabetes, along with other chronic diseases, including chronic mental disorders, such as depression (8). In the United States, diabetes is the sixth most common cause of death and a significant public health issue (9). Diabetes is the most prevalent non-communicable disease in Iran, affecting an estimated 5.2 percent of the population (10). According to studies, the number of diabetic patients in Iran in 2010 was 2,872,000, which will reach 5,981,000 by 2030, and every year, 155,000 new cases are added to this number (11).

Self-care is an active and practical process that is led by the patient and is necessary to prevent short-term and long-term complications (12). Self-care is a behavior in which a person takes care of their health independently, relying on their knowledge, ability, and skills as a resource. Self-care is an important part of a health-oriented lifestyle, making people value their health and strive to maintain and improve it (13). The adoption of a lifestyle integrated with self-

care behaviors brings pleasure and satisfaction to life, improves health as well as the quality of life, and reduces costs (14). Based on the studies, self-care activities, in addition to improving the quality of life of individuals with chronic diseases and their families, have a major role to play in reducing treatment costs (15). In the United States, diabetes accounts for around 14% of treatment expenses, at least a quarter of which are related to complications like heart attack, stroke, and end-stage renal disease. Lack of self-care is the primary underlying cause of death in diabetic patients, according to studies that are currently accessible (16).

The progression of diabetes as well as the regulation and treatment of this condition are affected by cognitive, behavioral, emotional, and social aspects (17). Chronic diseases, such as diabetes, disrupt one's psychological adjustment and social functioning; moreover, they negatively affect family functioning. The prevalence of negative psycho-cognitive consequences among patients with diabetes indicates the need to pay attention to the development of psychological interventions in the field of clinical psychology and health psychology (18). Studies demonstrated that diabetes is associated with an increased risk of psychological disorders and symptoms (19). Pervasive anxiety disorder, morbid fears, and obsessive-compulsive disorder were reported in 12%, 21.6%, and 1.3% of diabetic people, respectively. Abdominal cramps and eating disorders, such as obesity and anorexia nervosa, are also more common in these people than in the general population (20).

One of the issues covered in adherence treatment is self-compassion. People who go through bad things in life tend to act more ruthlessly and harshly than their loved ones in similar circumstances. Self-compassion entails treating others with the same decency and concern as oneself when facing hardship (21). Compassion plays a role in reducing immune responses and stress-induced behaviors, as well as increasing health-promoting behaviors (22). Being kind to oneself, accepting one's vulnerable feelings, not judging one's mistakes, and acknowledging the experiences that are shared by all people are all parts of the new psychological approach known as self-compassion (23).

Self-compassion is a positive expression of accepting the negative aspects of who we are and the way our lives are. This structure includes the three main components of being kind to oneself, the common human aspect, and mindfulness. A person with high self-compassion can have a gentle and kind attitude towards him/herself, even when faced with failure and misery. Such a person understands that all human beings fail and experience pain. These characteristics enable a person to experience his/her feelings and emotions properly, without being driven away from them or completely under their control (24). Therefore, one can expect that compassion itself is positively related to mental health (25).

In general, research shows that educational interventions have a significant effect on the psychological states of patients with type 2 diabetes in different countries. No study has been conducted on self-compassion training methods on psychological symptoms and self-care of patients with type 2 diabetes, as well as the impact of lifestyle modification training methods on health components. Therefore, it is necessary to assess the psychological symptoms and self-care, as well as the effectiveness of self-compassion training methods and lifestyle modification training on the two variables of psychological symptoms and self-care in these patients.

2. Objectives

The present study aimed to assess the effectiveness of self-compassion training in psychological symptoms and self-care in patients with type 2 diabetes.

3. Methods

This study's quasi-experimental methodology used a control group pre-test-post-test design. All patients with type 2 diabetes from Gilangharb city hospitals and diabetes associations made up the study's statistical population in 2020. Among whom 30 patients (self-compassion training and control group) were selected via the convenience sampling method. Self-compassion and control groups (each with 15 participants) were randomly assigned to the participants. Based on similar studies, the necessary sample size was estimated, accounting for the loss of 10% for each group of 15 participants and the effect size of 0.40, confidence level of 0.95, test power of 0.80, and the loss of 10% for each group of 15 people.

The inclusion criteria were having type 2 diabetes, no history of hospitalization with mental disorders, and willingness to participate in the study. On the other hand, the exclusion criteria entailed unwillingness to participate in the intervention, the occurrence of accidents during the study, and receiving psychiatric medication during the study. The study was performed in context (Adobe Connect) by the researcher. The following were the ethical considerations for this study: 1. All participants were given written information about the study and were given the option to take part if they so desired. 2. Individuals were given the guarantee that all information would be utilized strictly for research purposes. 3. Participants' first and last names were not registered in order to

Table 1. Content of self-compassion training sessions for diabetic patients

Session	Content
First	Pre-test; Familiarization of the therapist and group members with each other; Discussion about the purpose of the sessions and its overall construction; Examining the expectations of the treatment plan; Familiarity with the general principles of treatment focused on compassion and distinguishing compassion with self-compassion
Second	Explaining Compassion: What compassion is and how to overcome problems; Mindfulness training with physical examination and breathing; Introduction to Compassion-Based Brain Systems
Third	familiarity with the traits of compassionate people, compassion for others, developing feelings of warmth and kindness towards oneself, and, in the face of self-destructive emotions, developing and understanding that others have defects and issues (cultivating a sense of human commonality); Training to bolster one's energy, kindness, acceptance, and lack of judgment
Fourth	encouraging the subjects to explore their own selves and their personalities in terms of "compassionate" behavior; identifying and putting into practice the "cultivating a loving mind" tasks; Compassion's importance; empathy and sympathy for oneself and others
Fifth	Teaching parents, friends, and acquaintances the styles and techniques for expressing compassion (verbal compassion, practical compassion, cross-sectional compassion, and continuous compassion), as well as using these techniques in daily life
Sixth	Participants are given instruction in the development of their compassion skills in the areas of compassionate attention, compassionate reasoning, compassionate behaviour, compassionate imagery, compassionate feeling, and compassionate perception; use the Gestalt Empty Chair Technique to play the part of the individual in the three dimensions of self-critical, self-critical, and self-compassionate; Finding the tone of your inner self-critical and self-compassionate voice during a dialogue with yourself and comparing it to the speech patterns of significant others in your life, such as parents
Seventh	Filling in the weekly table of critical thoughts, compassionate thoughts, and compassionate behavior; Finding compassionate colors, places, and music that can be part of compassionate imagery; Working on the fear of self-compassion and the barriers to cultivating this trait; Teaching compassionate mental imagery techniques, rhythmic soothing breathing, mindfulness, and writing compassionate letters
Eighth	Summarizing, ending, responding to members' queries, and assessing the entire meeting; expressing gratitude to the participants for attending the seminars; carrying out the post-test

Table 2. Comparison of the mean and standard deviation of scores of research variables between the two groups before and after the intervention

Variables		Group	Pre-test		Post-test	
			M	SD	M	SD
Psychological symptoms	Somatization	Self-compassion	17.1	5.19	9.42	3.19
		Control	17.9	4.05	17.8	3.87
	Obsession and compulsion	Self-compassion	12.1	4.91	5.09	2.3
		Control	12.7	4.5	12.6	4.07
	Sensitivity in reciprocal relationships	Self-compassion	9.4	4.86	4.75	1.6
		Control	8.22	3.77	8.23	3.4
	Depression	Self-compassion	17.1	9.08	8.34	2.87
		Control	17.9	7.41	17.1	7.57
	Anxiety	Self-compassion	12.7	4.93	5.55	1.93
		Control	13.07	4.32	12.6	4.41
	Aggression	Self-compassion	9.11	3.15	3.56	0.94
		Control	9.38	3.19	9.18	3.52
	Panic	Self-compassion	7.45	3.19	2.34	2.86
		Control	7.21	2.2	7.07	2.43
	Paranoid thoughts	Self-compassion	5.94	2.36	1.41	1.32
		Control	6.41	2.27	6.14	2.23
	Psychosis	Self-compassion	13.7	4.21	6.22	4.01
		Control	13.2	1.88	13	2.29
	Self-care	Self-compassion	33	5.6	41.2	6.9
		Control	33.4	8.06	33.2	8.12

preserve their privacy. After preparing the questionnaires, the researcher received permission from the relevant university to implement them. After referring to the Health Center of Tehran and coordinating with the esteemed management, the statistical population(the experimental and control groups) was selected. Thereafter, the desired questionnaires were administered to both selected groups. After the implementation, the experimental group received the mentioned training and the post-test was performed again.

Psychological Symptoms Questionnaire (SCL-90-R)

This scale (SCL-90-R) was first introduced by Dragotis et al. in 1973 based. It is a list of self-report psychological symptoms developed by clinical psychometric research. This 90-item questionnaire is scored on a five-point Likert scale, ranging from none to very many. This scale has been used successfully for mentally ill patients, alcohol and drug addicts, impotent people, cancer patients, and heart failure patients. There are seven additional items in this scale that are not classified in any of the mentioned

dimensions and are referred to as “like others”. This test evaluates a person's condition since a week ago. The test is scored and interpreted based on three general indicators. To determine the prevalence of psychiatric symptoms in each dimension, the cut-off point of 2.5 is used, and the average score of ≥2.5 in each dimension is considered a morbid condition (26). In Iran, the cut-off point for general symptom coefficients (GSI) is 0.4. The same cut-off point has been used in many studies conducted in Iran. Numerous studies confirmed the optimal reliability and validity of this test. This test has been confirmed by two methods of internal stability and the test-retest reliability method (27). The reliability of this questionnaire was calculated at 0.81 in this study.

Tobert and Glasgow Diabetes Self-Care Questionnaire (2002)

The standard Tobert and Glasgow (2002) Self-care Behavior Questionnaire is used to assess the status of self-care behaviors in diabetic patients. People can rate the effectiveness of their diabetes-related self-care actions over the previous seven days by answering this 15-item questionnaire. They include maintaining a healthy weight, using insulin injections or the appropriate medication, checking blood sugar levels, exercising, taking care of your feet, and not smoking. The scoring of the questions on this scale was as follows: 0= for a person who has not had any self-care behaviors in the mentioned areas in the last seven days to 70=for a person who has done daily and complete care in all seven days. In addition to the scale of mean scores, the obtained scores, which range from 0-70, are separated into three parts, and a general compliance score is created by summing the scores of each item, are used to define the level of desirability of self-care status. In the pilot study, the structure of self-care activities had a Cronbach's alpha of 0.66, and the entire sample had a value of 0.68; also, a validity value of 0.75 was attained (28). The reliability of this questionnaire was 0.76 in this study.

Mean and standard deviation were calculated in the descriptive statistics section, while in the inferential statistics section, MANCOVA and ANCOVA methods were used to examine research hypotheses. It is worth mentioning that to test the defaults of the inferential test, Leven’s test (to check the homogeneity of variances), Kolmogorov-Smirnov test (to normalize the distribution of data), regression homogeneity test, and Mbox test was used. The above statistical analyzes were performed in SPSS software (version 24).

4. Results

The mean age scores were 52.36±12.23 and 50.89±10.76 in the experimental and control groups, respectively. There was no significant difference between the two groups in terms of age (*P>0.05*).

As illustrated in Table 3, by controlling the effect of pre-tests, the Wilkes lambda index is significant at the level of 0.05. In other words, it may be asserted that at least one aspect of "psychological symptoms" significantly differs between the experimental and control groups. Table 4 displays the results of a multivariate analysis of the covariance test for post-test psychological symptom components.

According to Table 4, by controlling the effect of F-tests obtained in such components as "physical complaint, obsession and compulsion, sensitivity in relationships, depression, anxiety, aggression, paranoid thoughts and psychosis" are significant (P<0.01). In other words, there are significant differences between the experimental and control groups in post-test scores of these variables.

The mean scores of the experimental group in the self-care variable were F=17.01 at the level of 0.01 and ETA squared=0.387, as shown in Table 5, and the difference between the pre-test-post-test scores of the experimental and control groups for the self-care variable was significant; The acquired results thus demonstrated the efficiency of self-compassion training in enhancing self-care in type 2 diabetic patients.

Table 3. Summary of MANCOVA analysis test to evaluate the effect of self-compassion training on psychological symptoms of patients with type 2 diabetes

Effects	Wilks Lambda	F	Df1	Df2	P	Eta
Group	0.063	18.1	9	11	0.001	0.93

Table 4. Multivariate analysis of covariance test for post-test components of psychological symptoms

Source	Variables	SS	Df	MS	F	P	Eta
Group	Somatization	390.2	1	390.2	56.3	0.001	0.74
	Obsession and compulsion	311.00	1	311.00	84.9	0.001	0.81
	Sensitivity in reciprocal relationships	112.08	1	112.08	31.8	0.001	0.62
	Depression	515.9	1	515.9	28.4	0.001	0.59
	Anxiety	297.7	1	297.7	59.3	0.001	0.75
	Aggression	188.6	1	188.6	55.1	0.001	0.74
	panic	164.3	1	164.3	43.4	0.001	0.69
	Paranoid thoughts	125.5	1	125.5	47.2	0.001	0.71
	Psychosis	347.9	1	347.9	32.8	0.001	0.63

Table 5. The effect of self-compassion training on self-care of patients with type 2 diabetes

Source	SS	Df	MS	F	P	Eta
Group	533.2	1	533.2	17.01	0.001	0.38
Error	846.03	27	31.3			

5. Discussion

The purpose of the current study was to assess the impact of self-compassion training on the psychological and self-care symptoms of type 2 diabetes patients. It can be said that self-compassion training helps individuals with type 2 diabetes who are experiencing psychological symptoms. This finding is consistent with those obtained by Morrison et.al (29), Semenchuk et al. (30), and Morgan et al. (31). In the present explanation, it can be argued that compassion itself is a modifiable attribute (11). Early intervention is especially important in people who use programs that promote compassion, and since compassion removes shame, it can control anger (16). The usefulness of self-compassion group training in fostering optimism in diabetic patients was also mentioned by Rafiee et al. (32)

The fundamental tenets of compassion-focused therapy emphasise the need for internalisation of externally calming ideas, experiences, images, and behaviours. Therefore, compassion-based therapy can be expected to help improve psychological well-being, resilience, and hope and reduce self-discontinuity by reducing internal judgments and increasing awareness and mindfulness (33).

On the other hand, the results of the present study pointed out that compassion-focused therapy is effective in the self-care of patients with type 2 diabetes. The present result is in accordance with the findings reported by Misurya et al. (34) and Rahmani et al. (35). It can be stated that diabetes is a disease with a chronic and progressive course and without any definitive treatment. It can also be directly related to severe anxiety in patients, and no disease depends on personal intervention and effort as much as diabetes (10). Patients who suffer from the complications of the disease (e.g., vision problems, and amputation of legs) have more health anxiety and visit physicians more frequently. Illnesses increase health anxiety and the patient makes more efforts to control the disease and self-care. Meanwhile, compassion can be effective in increasing self-care by reducing anxiety (36).

The absence of a follow-up examination, which constrained the conclusions regarding the durability of treatment outcomes, is one of the study's noteworthy drawbacks. A larger sample was likewise only partially accessible. As a result, it was unable to evaluate the therapy method's effectiveness to that of other methods. It is advised that other researchers take these difficulties into account in their upcoming study. Because individuals for this study were chosen from Gilan-e-Gharb patients with type 2 diabetes, another study drawback, extreme caution should be used when extrapolating the findings to other populations and cities. It is recommended that some facilities be set up to increase diabetic patients' awareness of the condition and appropriate management of their emotions and sentiments because some diabetic patients lack the necessary knowledge about diabetes. Additionally, these facilities must to teach individuals with diabetes how to take care of themselves to lessen their health anxiety.

6. Conclusion

Based on the findings of this study, it can be deduced that self-compassion training was successful in reducing psychological symptoms and improving self-care in patients with type 2 diabetes. It was also successful in reducing psychological issues in these individuals.

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Conflicts of interest

The writers affirmed their lack of any competing interests.

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