



Effectiveness of Self-Compassion Intervention Training on Glycemic Control in Patients with Diabetes

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Abstract

Background and Objectives: Type II diabetes is one of the most common chronic diseases with irreparable complications for patients if it is not managed properly. This research aimed to investigate the effectiveness of self-compassion training on glycemic control in patients with type II diabetes, presenting to Taleghani Diabetes Clinic in Kermanshah.

Methods: This quasi-experimental research with a pretest-posttest design and a control group recruited patients with type II diabetes presenting to Taleghani Diabetes Clinic in Kermanshah during 2016. Twenty patients were selected through convenience sampling method and were randomly assigned into experimental group (n = 10) and control group (n = 10). The experimental group was offered group self-compassion training in 8 sessions (90 minutes each) and the control group did not receive any training. The groups recorded their blood glucose levels three times a day in a form (3 hours after breakfast, 3 hours after lunch and 2 hours after dinner). Data were analyzed using ANOVA and t-test in SPSS version 21 software.

Results: The findings showed that after the intervention, the mean scores of the experimental group were significantly lower than those in the control group ($P < 0.001$).

Conclusions: Self-compassion training is effective in glycemic control in patients with diabetes. Therefore, it is suggested that therapists and psychologists use this method to control blood glucose level of patients with diabetes.

Keywords: Effectiveness, Self-Compassion Training, Glycemic Control, Type II Diabetes

1. Background

Diabetes mellitus is a common metabolic disorder that affects several organs and entails vascular and non-vascular chronic complications, and because of such destructive and chronic complications, it is the sixth leading cause of death and the main cause of disease-induced disability in America (1). The increasing prevalence of obesity and sedentary lifestyle are the main causes of type II diabetes and its complications (2).

Diabetes, and type II diabetes in particular are among diseases with relatively high prevalence throughout the world, and affecting 200 million people makes its management imperative (3). Evidence shows that controlling blood glucose affects the outcome of the disease, and achieving this requires the patient to follow a lifelong regimen, monitor the symptoms, control blood glucose, and use medications (4). Previous studies have shown that blood glucose control has a significant relationship with daily and weekly frequency of blood glucose measurement (5). In a study by Rezaei et al. frequency of having snacks

significantly increased after training, and a six-meal regimen (three main courses plus three snacks) improved blood glucose control and prevented hyperglycemia and hypoglycemia in patients (6). The results from previous studies have shown that personality and psychology of the patients with diabetes are among important factors affecting blood glucose control. Therefore, interventions to increase patients' inner control and self-efficacy can help improve adherence to treatment regimens and control of blood glucose (7).

Diabetes is properly managed when psychological components of diabetes are added to medication-therapy. At least three factors justify the addition of psychological interventions to treatment programs of patients with diabetes: 1- patients' increased acceptance of the disease and acceptance of the condition they are in; 2- behavioral changes for better self-care; and 3- elimination of psychological barrier to the disease control (8). The results from previous studies indicate that training patients with diabetes is effective in improving their diabetes control index

and self-efficacy (9). Training patients to enhance diabetes management is so important that it is considered an effective element in the management of diabetes, as it provides the opportunity to reduce the financial burden of diabetes on the patient, family, and the health systems by preventing the incidence or severity of complications and comorbidities along with many positive outcomes (10).

Self-compassion involves care and compassion toward oneself in the face of perceived hardships or shortcomings, and is defined as accepting feelings of vulnerability, care and kindness toward oneself, non-judgmental perception and attitude toward one's failures, and recognition of common experiences. People with self-compassion have greater audacity in coping with negative events, and when asked to recall their failures, use less negative and emotional self-evaluation (11).

Self-compassion training leads to improved well-being because it makes people feel suitably cared for and connected, and consequently calm. Moreover, self-compassion is a strong predictor of severity of symptoms and the quality of life, and has a determining role in predicting mental health, especially anxiety and depression (12). The chronic nature of diabetes affects the patient physically, functionally, and socially, and thus investigating factors affecting diabetes management and reducing its complications is particularly important, and considering studies already conducted and the research void in this area, the present study was conducted to investigate the effect of group self-compassion training on blood glucose control in diabetes patients.

2. Methods

In the present controlled quasi-experimental, pretest-posttest study, data were collected to assess the effect of independent variable (self-compassion) on dependent variable (blood glucose control) in patients with diabetes presenting to Taleghani Diabetes Clinic in Kermanshah. Of them, 20 patients were selected by convenient sampling, and randomly divided into experimental and control groups (10 patients each). The inclusion criteria were having type II diabetes, being older than 30 years of age, with a minimum of primary school education, and willingness to take part. Patients with type I diabetes and younger than 30 years were excluded. First, demographic details of participants in experimental and control groups were recorded. Before intervention, both groups were asked to record their blood glucose level on four occasions in one day: before breakfast, three hours after breakfast, three hours after lunch, and two hours after dinner. Self-compassion training was held over eight 90-minute sessions as Table 1.

At the end of training, two groups were asked to record their blood glucose level four times a day as before. One month after the second blood glucose test, experimental group patients were asked to carry out the test as before and record the results. Data recorded were analyzed using univariate covariance analysis and paired t-test.

3. Results

The study sample included 20 patients (10 in each group) with a mean age of 44.38 years and 43.57 years, and variance of 5.51 and 6.72 in experimental and control groups respectively.

Mean blood glucose values in experimental group in pretest, posttest and follow-up were 272.75, 205.25, and 216.5 respectively, which had reduced in posttest and follow-up. Data were found to have a normal distribution because Shapiro-Wilk's test showed a significant level for each test greater than 0.05 (Table 2).

Levene's test confirmed homogeneity of variance of blood glucose variable in experimental and control groups ($F = 0.065, P < 0.05$).

Table 3 shows in the source of group changes, $F = 288.031$ for blood glucose at a significance level of $P < 0.05$. Thus, the null hypothesis is rejected, and the study hypothesis of a significant difference between experimental and control groups in mean posttest blood glucose is accepted as Table 3 shows lower mean posttest blood glucose in experimental group compared to control. Therefore, self-compassion training has been effective in reducing blood glucose.

Table 4 presents the results of dependent t-test, and compares mean blood glucose in experimental group.

According to Table 4, $T = -12.611$ for the difference between pretest and follow-up values of blood glucose at $P < 0.05$. Thus, the null hypothesis is rejected and the study hypothesis of a significant difference between pretest and follow-up mean blood glucose in experimental group is accepted. Blood glucose values reduced by 56.25 points in the follow-up. Therefore, self-compassion training has a long-term effect on reducing blood glucose.

4. Discussion

Type II diabetes usually occurs when glucose regulating system is disrupted. Irregular treatment follow-up, irregular blood glucose monitoring, and improper treatment entail unfavorable metabolic control in diabetes (13). The results showed that self-compassion training improved blood glucose control in patients with type II diabetes. Diabetes control is hugely important, proper self-compassion training and metabolic control can improve

Table 1. Self-Compassion Training Sessions

Stage	Contents of Sessions
1	Evaluation of life expectancy, description of life expectancy and factors relating to its signs, conceptualization of cognitive self-compassion, and stating training objectives
2	Self-care training: To make people feel that they should follow affairs with self-compassion
3	Self-compassion training: Including training on the formation of greater and more diverse feelings in relation to people's problems to improve care, help and attention to health
4	Forgiveness training: To accept mistakes and forgive oneself for the mistakes to hasten changes
5	Acceptance of problems training: To accept coming changes and then to enable bearing difficult and challenging conditions, given the changeability of life and people dealing with various challenges
6	Training on development of valuable and transcendental feelings: To create valuable feeling about oneself to enable proper and efficient dealing with the environment
7	Accountability training: This is the main component of self-compassion training, which makes participants learn self-criticism to develop more effective attitudes and feelings
8	Skill training and practicing: Review and practice of skills presented in previous sessions to enable participants cope with different life conditions in different ways

Table 2. Descriptive Indices of the Study

Test	Number	Mean \pm SD	Shapiro-Wilk	P Value
Pretest				
Control	10	271.00 \pm 35.88	0.88	0.162
Experimental	10	272.75 \pm 21.96	0.85	0.068
Posttest				
Control	10	267.00 \pm 28.98	0.93	0.455
Experimental	10	205.25 \pm 12.55	0.91	0.289
Follow-up				
Experimental	10	216.50 \pm 12.37	0.92	0.369

Table 3. Covariance Analysis; Comparing Control and Experimental Groups in Terms of Mean Blood Glucose in Posttest

Source of Change	Sum of Squares	Degree of Freedom	Mean Squares	F	P Value	Eta Coefficient	Test Power
Pretest	7808.894	1	7808.894	113.537	0.001	0.870	1
Posttest	2970.092	1	2970.092	17.046	0.003	1	1
Group	19810.297	1	19810.297	288.031	0.001	0.944	1
Error	1169.231	17	68.778				
Total	1143142.750	20					

Table 4. Results of Dependent T-Test

Test	Mean Difference \pm SD	T	Degree of Freedom	P Value
Pretest-follow-up	-56.250 \pm 14.105	-12.611	9	0.001
Posttest-Follow-up	11.250 \pm 6.897	5.158	9	0.001

clinical outcomes of diabetes. Providing a good and empathetic care for diabetes, makes the patient feel better, leading to blood glucose management in patients with diabetes, and thus reduces the odds of developing long-term diabetes-induced complications. The advances made in control of diabetes have made it possible for patients with

diabetes to have a longer, healthier and happier lives.

The present study results agree with those obtained by Mohammad et al. (5), Afkhami Ardekani et al. (7), Tan et al. (9), and Cheraghi et al. (13). Cognitive self-compassion training is defined as a positive attitude toward oneself, and enhances people's mental health (14).

Poor self-compassion is accompanied by psychological problems such as anxiety and depression (15). However, the distinctive feature of self-compassion is that it is steered toward personal pain and suffering, and is considered as an important part of a positivist psychological approach (16). In Beck's view, negative attitude toward oneself is the main part of change, and people learn to use new experiences through therapy based on cognitive self-compassion, and this organizes their beliefs such as alternative and more adaptive beliefs (17). Compatible adaptation to unpleasant events by focusing on evaluation of the situation creates new solutions to problems. In other words, improved self-compassion leads to greater self-efficacy in facing stressful situations.

Hence, people with self-compassion and high self-sufficiency have appropriate coping resources such as kindness toward oneself in difficult situations, acceptance of painful experiences as a common experience for all humans, and awareness of painful experiences without suppressing them, which helps them deal with negative life events. Self-compassion training leads to improved well-being, and makes people feel cared for and well-connected, and therefore calm. Moreover, training and practices aimed to improve self-compassion skills can be effective in improving various forms of disturbances.

4.1. Conclusion

According to the present study results, self-compassion training dramatically improves personal care and performance of patients with diabetes, this in turn controls blood glucose.

It is recommended that future studies investigate self-compassion educational intervention in patients with type I diabetes and other diseases, and compare a number of psychotherapy methods in groups of patients. It is also recommended that authorities use self-compassion training as a fairly inexpensive method to increase positive psychological characteristics such as hope in life.

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References

- Rahimi M, Niromand E, Rezaei M. [The relationship between fasting and postprandial blood glucose with HbA1c in type 2 diabetes]. *J Zanjan Univ Med Sci*. 2009;17(69):45-53. Persian.
- American Diabetes Association. Diagnosis and classification of diabetes mellitus. *Diabetes Care*. 2014;37(Suppl 1):S81-90. doi: 10.2337/dci14-S081. [PubMed: 24357215].
- Morris T, Moore M, Morris F. Stress and chronic illness: The case of diabetes. *J Adult Dev*. 2011;18(2):70-80. doi: 10.1007/s10804-010-9118-3.
- Gafvels C, Wandell PE. Coping strategies in men and women with type 2 diabetes in Swedish primary care. *Diabetes Res Clin Pract*. 2006;71(3):280-9. doi: 10.1016/j.diabres.2005.07.001. [PubMed: 16242806].
- Mohammad HA, Farghaly HS, Metwalley KA, Monazea EM, Abd El-Hafeez HA. Predictors of glycemic control in children with Type 1 diabetes mellitus in Assiut-Egypt. *Indian J Endocrinol Metab*. 2012;16(5):796-802. doi: 10.4103/2230-8210.100679. [PubMed: 23087867]. [PubMed Central: PMC3475907].
- Rezaei N, Tahbaz F, Kimyagar M, Alavi Majd H. [The effect of nutrition education on knowledge, attitude and practice of type 1 diabetic patients from Aligoodarz]. *J Shahrekord Univ Med Sci*. 2006;8. Persian.
- Afkhami Ardekani M, Zare H, Alipor A, Poursharifi H, Arab Sheibani K. [Correlation between self efficacy, type d personality and health locus of control with control of blood sugar in patients with diabetes type II]. *Shahid Sadoughi Univ Med Sci*. 2013;20(6):805-13. Persian.
- Feifer C, Tansman M. Promoting psychology in diabetes primary care. *Prof Psychol Res Pr*. 1999;30(1):14-21. doi: 10.1037/0735-7028.30.1.14.
- Tan MY, Magarey JM, Chee SS, Lee LF, Tan MH. A brief structured education programme enhances self-care practices and improves glycaemic control in Malaysians with poorly controlled diabetes. *Health Educ Res*. 2011;26(5):896-907. doi: 10.1093/her/cyr047. [PubMed: 21715653].
- O'Brien T, Denham SA. Diabetes care and education in rural regions. *Diabetes Educ*. 2008;34(2):334-47. doi: 10.1177/0145721708316318. [PubMed: 18375783].
- Neff KD, Kirkpatrick KL, Rude SS. Self-compassion and adaptive psychological functioning. *J Res Pers*. 2007;41(1):139-54. doi: 10.1016/j.jrp.2006.03.004.
- Van Dam NT, Sheppard SC, Forsyth JP, Earleywine M. Self-compassion is a better predictor than mindfulness of symptom severity and quality of life in mixed anxiety and depression. *J Anxiety Disord*. 2011;25(1):123-30. doi: 10.1016/j.janxdis.2010.08.011. [PubMed: 20832990].
- Cheraghi F, Mortazavi SZ, Shamsaei F, Moghimbeigi A. [Effect of education on management of blood glucose in children with diabetes]. *J Nurs Educ*. 2014;3(1):1-11. Persian.
- Wang X, Chen Z, Poon KT, Teng F, Jin S. Self-compassion decreases acceptance of own immoral behaviors. *Pers Individ Dif*. 2017;106:329-33. doi: 10.1016/j.paid.2016.10.030.
- Krieger T, Martig DS, van den Brink E, Berger T. Working on self-compassion online: A proof of concept and feasibility study. *Internet Interv*. 2016;6:64-70. doi: 10.1016/j.invent.2016.10.001. [PubMed: 30135815]. [PubMed Central: PMC6096262].
- Hollis-Walker L, Colosimo K. Mindfulness, self-compassion, and happiness in non-meditators: A theoretical and empirical examination. *Pers Individ Dif*. 2011;50(2):222-7. doi: 10.1016/j.paid.2010.09.033.
- Raque-Bogdan TL, Ericson SK, Jackson J, Martin HM, Bryan NA. Attachment and mental and physical health: self-compassion and mattering as mediators. *J Couns Psychol*. 2011;58(2):272-8. doi: 10.1037/a0023041. [PubMed: 21463033].