



The Effectiveness of Skill Training based on Compassion-Focused Therapy on Psychological Capital and Depression in Adolescent Girls with Type 1 Diabetes

Afrouz Hamidi¹, Fariba Hassani^{2*}, Farnaz Keshavarzi Arshadi², Fayegh Yousefi³

¹ PhD Student in General Psychology, Department of Psychology, Central Tehran Branch, Islamic Azad University, Tehran, Iran.

² Assistant Professor, Department of Psychology, Central Tehran Branch, Islamic Azad University, Tehran, Iran.

³ Associate Professor, Department of Psychiatry, Medical faculty, Kurdistan University of Medical Sciences, Sanandaj, Iran.

Received: 21 May 2021

Accepted: 28 July 2021

Abstract

Background: Diabetes is a chronic disease with a high risk of disability and death. In addition to physical complications, some psychological problems especially depression and loss of psychological capital are also common in people with diabetes. This study aimed to investigate the effectiveness of compassion-focused therapy (CFT) training on psychological capital and depression in female adolescents with type 1 diabetes.

Methods: The research method was quasi-experimental with pretest-posttest and follow-up. The statistical population of the study was all adolescents aged 16-14 years with type 1 diabetes in Sanandaj city. The statistical sample consisted of 30 adolescents with type 1 diabetes who were purposefully selected and randomly divided into experimental (n=15) and control (n=15) groups. The PCQ-24 scale was used to collect data to measure psychological capital and the BDI-II scale was used to measure depression. The experimental group received 90 minutes of skill training based on CFT in eight sessions, but the control group did not receive any intervention. Data were analyzed by repeated measure in SPSS software v. 25.

Results: The results showed that skill training based on CFT was effective on psychological capital and depression in adolescent girls with type 1 diabetes in the post-test phase (Pvalue<0.05), and had a lasting effect (Pvalue<0.05).

Conclusions: The results showed that skill training based on CFT is effective on psychological capital and depression, so it is recommended that clinical psychologists use this training to increase the psychological health of patients with type 1 diabetes.

Keywords: Skill training, Compassion-focused therapy, Psychological capital, Depression, Diabetes type 1.

*Corresponding to: F Hassani, Email: Hassani.fariba@gmail.com

Please cite this paper as: Hamidi A, Hassani F, Keshavarzi Arshadi F, Yousefi F. The effectiveness of skill training based on compassion-focused therapy on psychological capital and depression in adolescent girls with type 1 diabetes. Int J Health Stud 2021;7(4):40-46

Introduction

One of the issues that threaten the physical and mental health of adolescents is chronic diseases. Chronic diseases include cardiovascular disease, cancer, respiratory diseases, influenza, lung infections, and diabetes, which are among the leading causes of death in the world.^{1,2}

Diabetes is the most common metabolic disease and the fourth leading cause of death in western societies. It is referred to as a silent epidemic and is considered a public health problem in parts of the world.^{3,4}In this metabolic disorder, the

body is unable to produce or use insulin adequately.⁵ The latest report from the international diabetes association estimates that there are 244 million people with diabetes worldwide and the number of people with diabetes will grow to 642 million in 2040, of which more than 80% live in developing countries.⁶

Since diabetes type 1 leads to permanent changes in a teenager's life, it can affect his or her physical, mental, social, communication, and academic performance and lead to frustration. If these patients are not able to control diabetes properly, they face extensive lifestyle changes that lead to threatening conditions and their disability; therefore, they experience a lot of stress. Adolescents with diabetes are constantly anxious and depressed due to a lack of social interactions and constant life changes. Fear of hyperglycemia, realizing the difference with their peers, and their social anxiety leads to their isolation and distance from society and reduces their psychological capital.⁷

Psychological capital is one of the indicators of positive psychology, which is defined by characteristics such as belief in one's abilities to achieve success, persistence in pursuing goals, creating a positive self-image, and enduring problems.⁸ It is also characterized by having the necessary self-confidence and striving to succeed in challenging tasks (self-efficacy), optimism, hope, and resilience.⁹ Depression is a mood disorder that presents with symptoms such as low mood, loss of pleasure, weight loss, insomnia, tiredness, emptiness, guilt, inability to concentrate, and thoughts about death.¹⁰

Various therapeutic and educational methods have been used for patients with diabetes to improve the psychological components. One of the new therapeutic approaches is compassion-focused therapy (CFT) developed by Paul Gilbert. CFT is based on an evolutionary approach to psychological functions,¹¹ emphasizing altruism, and caring behavior.^{12,13}

The concept of compassion refers to the warmth and acceptance of unpleasant aspects of oneself and life. Self-compassion can be defined as being aware of one's suffering and taking a comforting and compassionate attitude toward oneself when things go wrong.¹⁴ Self-compassion is one of the most important components of mental health and has capabilities that people can gain happiness and psychological well-being by learning and performing related skills.¹⁵ Basic principles in CFT point out that external soothing thoughts,

factors, images, and behaviors must be internalized. And in this case, the human mind, as it reacts to external factors, calms down in the face of these internalities.¹⁶ In exercises focused on compassion, calm mind, self-compassion and mindfulness are emphasized, which will play an important role in calming the mind, reducing stress and negative spontaneous thoughts.¹⁷

CFT is an eclectic approach grown from social, evolutionary, Buddhist, and neuroscience psychology, as well as other therapies with effective intervention in a variety of mental health problems.¹⁸ This approach has two main goals: reducing self-directed hostility and developing one's ability to build self-confidence, kindness, and self-reliance.¹⁹ People who have been treated with self-compassion, experience higher psychological well-being, and experience less depression, anxiety, and rumination in challenging social situations are more satisfied with their lives.²⁰

Many research have shown the effect of self-compassion training on increasing resilience (Bluth & Eisenlohr,²¹ Shafiee, Akbari, and Heidari Rad),²² self-concept and expression of female students (Ghaffarian and Khayatan),²³ depression and blood sugar control in type 2 diabetic patients (Ferrari et al.,²⁴ Zarei),²⁵ psychological capital of female students suffering from emotional failure (Ahmadpour Dizaji, Zahrakar, and Kiamanesh),²⁶ depression and anxiety of divorced women (Shirali Ney et al.²⁷), depression, anxiety, and quality of life have confirmed the mental health of patients (Ahmadi, Sajjadian, Jaffari,²⁸ Salimi et al).²⁹ However, no research was found on skill training based on CFT on psychological capital and depression in female adolescents with type 1 diabetes.

Psychiatric factors play an important role in the development of diabetes in susceptible individuals. Attention to psychiatric and medical problems reduces the incidence of complications and increases the quality of life of diabetic patients.³⁰ Therefore, the need for psychological interventions in these cases seems necessary, so the present study seeks to answer the question of whether compassion-based skills training is effective on psychological capital and depression in adolescent girls with type 1 diabetes.

Materials and Methods

The current study was applied in terms of purpose and semi-experimental with a pretest-posttest design with a control group and a quarterly follow-up phase. The statistical population of this study consisted of adolescents aged 14-16 years with type 1 diabetes in Sanandaj city. The statistical sample consisted of 30 adolescents with type 1 diabetes who were purposefully selected and randomly divided into an experimental group (n=15) and a control (n=15) group. The sample size was determined by referring to the Cohen³¹ table to determine the sample size in experimental studies at 95% confidence level, the effect size of 0.50, and the test power of 0.80 for each group of 15 people. The identification process was performed from June to July. First, 90 people were identified and considering their informed consent to participate in the research, 30 of them were purposefully selected, then the selected people in each group were randomly alternate. To

select the sample of depressed people by interview method based on structured clinical interview for DSM-IV and people with low psychological capital was selected using psychological capital PCQ-24.

The inclusion criteria for entering the study consisted of diagnosis of type 1 diabetes by a specialist, having a history of at least one year of type 1 diabetes, signing an informed consent to participate in the study, living with parents at the time of the research, age range 14-16 years, not receiving any training or psychological treatment during the research, not abusing drugs, with depression and a low score of psychological capital. The exclusion criteria included incomplete questionnaires, and reluctance to participate in treatment sessions.

Treatment sessions based on the theoretical foundations of CFT based on Gilbert's theory³² were presented to the subjects in experimental groups by a researcher at the Sanandaj diabetes center and psychiatric clinic, from August to October, in 8 sessions (one session per week for 90 minutes). And the control group did not receive any training. A summary of the training sessions is given in table 1.

In the present study, the following questionnaires were used to collect data.

1-Psychological capital: PsyCap was measured with the PCQ-24. The PCQ-24 comprises four subscales with equal weight of hope, optimism, self-efficacy, and resilience. Each of these subscales consists of six items with response options on a six-point Likert scale ranging from 1 ('strongly disagree') to 6 ('strongly agree'). Each of the four subscales was drawn from established scales previously published, tested, and used in recent workplace studies. More specifically, the hope items were adapted from Snyder et al.'s³³ state hope scale, the optimism items from Scheier and Carver's³⁴ measure of optimism, the self-efficacy items from Parker's³⁵ measure of self-efficacy in the workplace and resilience from Wagnild and Young's³⁶ resilience scale. Good internal consistency for the respective subscales (hope: 0.72, 0.75, 0.80, 0.76; optimism: 0.74, 0.69, 0.76, 0.79; self-efficacy: 0.75, 0.84, 0.85, 0.75; and resilience: 0.71, 0.71, 0.66, 0.72) on the four samples utilized in the Luthans, Avolio, Avey, & Norman³⁷ study were reported. In Iran, the content validity and its structure were confirmed in the research of Hashemi Nosratabad, Babapour Khairuddin, and Bahadori Khosroshahi³⁸ and the internal reliability of this questionnaire was 0.85 based on Cronbach's alpha.

2-The BDI is a 21-item patient's self-report questionnaire that measures depression severity.³⁹ All items of the BDI are rated on a four-point Likert scale ranging from 0 to 3, and the total score, therefore, ranges from 0 to 63. Beck et al. developed the revised version of the BDI to harmonize its item contents with the modern diagnostic criteria for MDD in the diagnostic and statistical manual of mental disorders (DSM)-IV while maintaining the same number of items and range of scale as the BDI.⁴⁰ The BDI has sufficient internal consistency in psychiatric patients (Cronbach's α ranging from 0.76 to 0.95) and non-psychiatric populations (Cronbach's α ranging from

0.73 to 0.92).⁴¹ The BDI-II also has sufficient internal consistency ($\alpha=0.93$ among college students, $\alpha=0.92$ among outpatients).⁴⁰ According to a survey of 1022 undergraduate students, the mean score of the BDI-II was 1.54 points higher than that of the BDI.⁴² However, the two scales showed high correlation ($r=0.93$), suggesting convergence of the two scales. In Rajabi, Attari and Jamal's⁴³ research, Cronbach's alpha coefficient (internal consistency) for the whole questionnaire was 0.87, its halving reliability coefficient was 0.83 and the retest reliability coefficient was 0.49 three weeks apart.

The data were analyzed using SPSS v. 25 software. Despite

the follow-up test, repeated measure analysis was used to compare the differences between the experimental and control groups in the variables of psychological capital and depression. The data were analyzed using SPSS Software v. 25. Frequency, percentage, mean and standard deviation were used to describe the data. Repeated measure analysis was used to examine intra-group and inter-group changes in three stages of measurement (pre-test, post-test, and follow-up). In this study, ethical considerations including observance of scientific honesty and trustworthiness, informed consent to participate in the research, observance of the subjects' right to remain anonymous, and keeping their information confidential have been considered.

Table 1. Summary of the content of Skill Training based on CFT on psychological capital and depression of adolescents with type 1 diabetes in Sanandaj City, 2019

Sessions	Goals	Content	Exercises
1	Communication between members to teach compassion	Familiarity with the general principles based on CFT, and recognizing compassion for self-compassion and mindfulness training with physical examination and breathing	Breathing exercises
2	Familiarity with brain systems and their function	Reviewing the assignment of the first session, teaching the three systems of emotion regulation and how they interact, defining self-criticism and its causes, teaching empathy.	Examine and identify thoughts and self-critical behavior
3	Familiarity with the characteristics of compassionate people	Familiarity with the characteristics of compassionate people, compassion for others, compassion for oneself, training to cultivate a sense of human commonality in the face of self-destructive feelings of shame and compassion.	Recording of compassion-based components in daily activities
4	Identify and apply compassionate mind training exercises	Encouraging subjects to self-knowledge and examine their personality as compassionate and non-compassionate according to the educational topics, identification and application of exercises to cultivate the compassionate mind, the value of compassion, empathy, and sympathy for oneself and others.	Identification and application of compassion components
5	Training styles and methods of expressing compassion	Training styles and methods of expressing compassion (verbal compassion, practical compassion, cross-sectional compassion, continuous compassion) and applying these methods in daily life to parents, friends, teachers, and acquaintances.	Applying these methods of expressing compassion in everyday life and for parents, friends, and acquaintances.
6	Training compassion-based skills	Training compassion skills to participants in the areas of compassionate attention, compassionate reasoning, compassionate behavior, compassionate imagery, compassionate feeling and behavior, playing the role of the individual in the three-dimensional existential self-critical, self-critical and self-compassionate with the Gestalt empty seat technique Finding the tone of the inner self-critical and self-compassionate voice during inner dialogue and its resemblance to the pattern of dialogue of important people in life.	Recording of inner conversations of self-critical and self-compassionate
7	Expand and correct compassion	Training and application of compassionate mind exercises (forgiveness, acceptance without judgment, teaching metaphoric training of flu and training tolerance), training to accept the problems and changes ahead and enduring difficult and challenging situations due to the changing life and facing various challenges. Training to write compassionate letters to yourself and others.	Practicing writing compassionate letters
8	Knowing the barriers of compassion	Filling the weekly table of critical thoughts, compassionate thoughts, and compassionate behavior. Finding compassionate colors, places, and music that can be components of compassionate imagery, working on the fear of self-compassion and the barriers to cultivating it.	Keep notes of what you learned from the process

Results

Table 2 shows the frequency and percentage of age and level of education of the subjects. The subjects of the two groups are homogeneous in terms of age and level of education.

Table 3 shows the Mean \pm SD of the research variables. According to table 2, there is a difference between the mean psychological capital and depression of the subjects in the study groups in the three stages of the test, and this difference

is greater in the post-test and follow-up stages than in the pre-test stage.

In table 4, the results of the Kolmogorov-Smirnov test are not significant, so the condition of normal distribution of scores is established. The results of Mauchly's test indicate the equality of the variance/covariance matrices and the establishment of the spherical assumption. Mauchly's statistic is significant for psychological capital and depression ($Pvalue<0.05$). This finding shows that the variance of differences between the levels of dependent variables is significantly different. Therefore, the spherical default is not

observed for the variables of psychological capital and depression. Violation of the spherical default causes the F-statistical analysis to be inaccurate. To solve this problem and increase the accuracy of the F statistic, changes in the degrees of freedom must be made to make the F ratios valid, so the degree of freedom is corrected using the three methods of Greenhouse-Geisser, Huynh-Feldt, and Laurel-Band. One of the most common of these methods is the "Greenhouse-Geisser" correction, which was used in this study to solve this problem.

As the results in table 5 show, the psychological capital variable F is significant for time 299.58. In other words, as shown by the partial value of Eta, 0.91 changes in the score of psychological capital are explained by the intra-group factor. It is also significant about the effect of interaction within the group between time and the experimental and control groups (F=196.97) and its small value of Eta shows that 0.87 of the changes can be explained by the interaction between time levels with the group. In the depression, variable F is significant for time (238.06). In other words, as shown by the small amount of Eta, 0.84 changes in depression score are explained by the intragroup factor. The effect of intra-group interaction between time and the experimental and control groups is also significant (F=196.97) and its small value of Eta

indicates that 0.86 of the changes can be explained by the interaction between time levels and the group. Because the main effect within the group was significant, so at this stage, the mean means were examined by the Bonferroni test. The results can be seen in table 6.

The results of Tukey test in table 6 show that in the experimental group there is a significant difference between pre-test scores with post-test and follow-up scores, post-test with follow-up scores (P<0.01).

As the results in table 7 show, the intergroup effect on psychological capital and depression variables is significant (Pvalue<0.01). The value of partial Eta squared also shows that 0.74 of the changes in psychological capital score and 0.91 of changes in depression score can be explained by Skill Training based on CFT.

According to the results of table 8, there is a significant difference between psychological capital and depression in the experimental group and the control group; the score of psychological capital in the experimental group is 21.73 higher than the control group (Pvalue<0.01); the depression score in the experimental group was -4.26 higher than the control group (Pvalue<0.01).

Table 2. Demographic variables of the studied sample

Demographic variables	Experimental group			Control group			The result of comparing the two groups with the χ^2 test
	16 Frequency (%)	15 Frequency (%)	14 Frequency (%)	16 Frequency (%)	15 Frequency (%)	14 Frequency (%)	
Age	5(33.3)	5(33.3)	5 (33.3)	4(44.4)	5(33.3)	6(54.5)	$\chi^2=0.20$ P=0.90
Education	High school 8(53.3)	Guidance School 7(46.7)			High school 7(46.7)	Guidance School 8(53.3)	$\chi^2=0.13$ P=0.71

χ^2 = chi-square

Table 3. Mean±SD of psychological capital and depression in the pre-test, post-test and follow-up

Variables	Groups	Pre-test	Post-test	Follow-up
		Mean±SD	Mean±SD	Mean±SD
Psychological capital	Experiment	53.61±81.7	13.95±92/4	53.96±12.4
	control	26.60±51.8	06.64±36/8	66.63±16.8
Depression	Experiment	53.19±55.5	46.12±61/4	20.12±57.4
	control	80.18±61.6	93.18±15/6	26.19±22.6

Table 4. Test results for normality, homogeneity of variances, mole sphericity and Mbox

Variables	Groups	Normality		MW	Pvalue	Box's M	Pvalue
		Z	P				
PC	Compassion-based skills training	0.13	0.11	0.17	<0.01	55.04	<0.01
D	Control	0.20	0.09				
PC	Compassion-based skills training	0.18	0.18	0.71	<0.01	8.80	0.26
D	Control	0.13	0.20				

PC=Psychological capital, D=Depression, Z=Kolmogorov-smirnov, MW=Mauchly's W, Box's M=Box's test of equality of covariance matrices

Table 5. Results of intra-subject analysis of variance with repeated measures of psychological well-being and depression

Variables	Source		SS	df	MS	F	Pvalue	η^2	OP
PC	Time	G-G	7185.80	1.09	6580.71	299.58	<0.01	0.91	1
	Time * group	G-G	4724.60	1.09	4326.76	196.97	<0.01	0.87	1
	Error(factor1)	G-G	671.60	30.57	21.96	-	-	-	-
D	Time	G-G	238.06	1.55	153.09	149.23	<0.01	0.84	1
	Time * group	G-G	282.60	1.55	181.73	177.15	<0.01	0.86	1
	Error(factor1)	G-G	44.66	43.54	1.02	-	-	-	-

PC=Psychological Capital, D=Depression, G-G=Greenhouse-Geisser, SS=Sum of Squares, MS=Mean Square, η^2 = Partial Eta Squared, OP=Observed Power

Table 6. Results of Benferroni post hoc test for pairwise comparison of mean psychological capital and depression in the experimental group

Variables	time (I) time (J)		Difference in Mean (I-J)	SE	P
	PC	Pre-test	Post-test	33.60	2.14
		Follow-up	35	2.15	<0.01
Post-test		Follow-up	1.40	0.49	0.041
D	Pre-test	Post-test	7.067	0.42	<0.01
		Follow-up	7.33	0.47	<0.01
	Post-test	Follow-up	0.27	0.26	1

PC=Psychological Capital, D=Depression. SD=Standard Error, P=Pvalue

Table 7. Tests of between-subjects effects

Variables	Source	SS	df	MS	F	Pvalue	η^2	OP
CP	Intercept	486643.60	1	486643.60	3693.89	<0.01	0.99	1
	group	10627.60	1	10627.60	80.66	<0.01	0.74	1
	Error	3688.80	28	131.74				
D	Intercept	25603.60	1	25603.60	269.16	<0.01	0.91	1
	group	409.60	1	409.60	4.30	0.047	0.13	0.51
	Error	2663.46	28	95.12				

PC=Psychological capital, D=Depression, SS=Sum of squares, MS=Mean square, η^2 =Partial Eta squared, OP=Observed power

Table 8. Tukey test results to compare the mean values of psychological well-being and depression in the study groups

Variables	(I-J) Group	Mean Diff. in (I-J)	SE	Pvalue
psychological capital	Compassion-based skills training-control	21.73	2.42	<0.01
Depression	Compassion-based skills training-control	-4.26	2.06	0.047

PC=Psychological capital, D=Depression. SE=Standard Error

Discussion

The current study aimed to evaluate the effectiveness of Skill Training based on CFT on psychological capital and depression in female adolescents with type 2 diabetes. Based on the results of the study, it was found that Skill Training based on CFT is effective in increasing the psychological capital of patients with type 1 diabetes and has increased the psychological capital in patients. This finding is consistent with the results of studies of Bluth & Eisenlohr,²¹ Shafiee, Akbari and Heidari Rad,²² and Ahmadpour Dizaji, Zaharakar, and Kiamanesh.²⁶

Explaining the effect of this treatment on increasing psychological capital, self-sufficiency is an important human resource that is considered as a quality of kindness, gentleness, feeling of inner connection, and helping people to be hopeful facing life's difficulties. The compassionate mind also helps maintain optimistic expectations about the future with related adaptive coping skills. On the other hand, a positive outlook on the future is the most important benefit of self-sufficiency, and compassionate intervention is effective in increasing people's optimism about their abilities when faced with challenging situations. Also, training and exercises that are done aiming to increase self-sufficiency in people, can be effective in improving various forms of disorders.⁴⁴

Compassion itself seems to facilitate flexibility by modifying individuals' reactions to negative events.⁴⁵ In addition, compassionate therapy teaches people not to avoid or suppress their painful feelings. Therefore, in the first step, people may know their experience and feel compassion for it. In this way, instead of focusing on changing people's "self-assessment", people's relationship with their "self-assessment" changes. Self-compassion exercises emphasize relaxation,

relaxation of mind, self-compassion, and mindfulness, which will play an important role in calming the mind, reducing stress and negative spontaneous thoughts. Also, the self-esteem of self-compassionate people is not directly dependent on the outcome of their behavior, but whether the process of life goes well or badly, these people have a compassionate acceptance and attitude towards themselves. However, high self-esteem does not require failure, mistake, and rejection in the path of life, and this is not possible, because these experiences are an integral part of human life.

On the other hand, according to the findings of Dietrich et al.⁴⁶ based on the compassion-focused treatment approach, it acts as a positive emotion regulation style and reduces negative emotions, and replaces positive emotions.⁴⁷ Self-compassion affects the four perceptual-cognitive components of psychological capital: hope, optimism, self-efficacy, and resilience. Since in an interactive and evaluative process, these components give meaning to a person's life, continue the person's effort to change stressful situations, prepare him to enter the action scene, and ensure his resilience and persistence in achieving goals, by acting on these four sources in an interconnected system, they act to strengthen each other and form a shield resistant to stressors.⁴⁸

Other results showed that CFT training is effective in reducing depression in girls with type 1 diabetes. This finding is consistent with the results of studies (Ferrari et al.,²⁴ Zarei,²⁵ Ahmadpour Dizaji, Zaharakar, and Kiamanesh,²⁶ Shirali Ney et al.,²⁷ Harouni Jamaloui,²⁸ and Salimi et al.)²⁹

People with higher self-compassion in experiencing unpleasant events, especially experiences that involve social evaluation and comparison, given that human beings can make mistakes, experience fewer negative emotions (human

commonalities component). The component of self-compassion awareness also helps to prevent pessimistic thoughts and rumination as a central feature of depression, and the component of awareness and mindfulness reduces negative emotions in people by reducing rumination as a result of accidents; as a result, they face fewer negatives rumination and experience fewer negative emotions, depression, anxiety, and stress facing their mistakes.⁴⁹

The CFT training helps clients change their problematic cognitive and emotional patterns, and with changes in destructive mental patterns, the patient becomes kinder to himself or herself and others, and less sensitive to shortcomings and adversity. The patient learns the result of emotion regulation after training and his ability to balance emotions; in a way, it increases the range of interpersonal and social relations and kindness to others improves the level of mood and reduces depression.⁵⁰ On the other hand, in explaining this finding, we can refer to the nature and content of compassion exercises, because compassion exercises emphasize relaxation, calm and compassionate mind, and mindfulness, and play an important role in calming the person, reducing stress and spontaneous thoughts, for its part, it reduces depression.⁵¹ The CFT acts as a positive emotion regulation style, reduces negative emotions, and replaces them with positive emotions; thus, it seems that this emotional self-regulation reduces depression.²⁹

Incompatibility with the disease is related to the emotional regulation style of avoidance and non-expression. This type includes patients who have difficulty identifying and describing their emotions, are unaware of their emotions, avoid expressing their emotions, and are ambivalent in expressing them. Accordingly, the expression of emotions in patients with chronic diseases is often recognized as a component of psychological interventions; because unresolved emotions negatively increase the activity of the sympathetic system.⁵² In general, the CFT skills activates the care system and neutralizes the threat system, and patients treat the past hardships, sufferings, and bitter experiences with kindness and compassion, and thus become kinder to themselves. They blame and criticize, accept the problems caused by their illness and endure the stresses caused by it without engaging with negative experiences and thoughts, and are responsible for their problems so that their depression is reduced.²⁸

The results of the study showed that skill training based on CFT was effective on psychological capital and depression in female adolescents with type 1 diabetes. As a result, this treatment can be used by clinical psychologists in psychological interventions related to psychological capital and depression in female adolescents with type 1 diabetes. This study is related to Sanandaj city and female adolescents with type 1 diabetes, so generalizations should be done with caution. It is suggested that in other cities and cultures, similar studies be conducted with longer sessions.

Acknowledgement

This article was extracted from the doctoral dissertation in the field of counseling and has the code of research ethics approved in school of Medicine-Islamic Azad university of medical sciences, Tehran, with the code of ethics

(IR.IAU.TMU.REC.1399.127). The authors thank and appreciate all the adolescent girls with type 1 diabetes who participated in the present study.

Conflict of Interest

The authors declare that they have no conflict of interest.

References

- Zamora-Kapoor A, Fyfe-Johnson A, Omidpanah A, Buchwald D, Sinclair K. Risk factors for pre-diabetes and diabetes in adolescence and their variability by race and ethnicity. *Preventive Medicine* 2018;115:47-52. doi:10.1016/j.ypmed.2018.08.015
- Ziegler R, Neu A. Diabetes in childhood and adolescence: A guideline-based approach to diagnosis, treatment, and follow-up. *Deutsches Ärzteblatt International* 2018;115:146.
- Graham E, Deschênes SS, Rosella LC, Schmitz N. Measures of depression and incident type 2 diabetes in a community sample. *Ann Epidemiol* 2021;55:4-9. doi:10.1016/j.annepidem.2020.11.010
- American Diabetes Association. Obesity management for the treatment of type 2 diabetes: Standards of medical care in diabetes-2018. *Diabetes Care* 2018;41:S65.
- Deacon CF. Peptide degradation and the role of DPP-4 inhibitors in the treatment of type 2 diabetes. *Peptides* 2018;100:150-7. doi:10.3389/fendo.2019.00080
- Amini R, Najafi H, Samari B, Khodaveisi M, Tapak L. Effect of home care program on therapeutic adherence of patients with type 2 diabetes. *J Educ Community Health* 2020;7:187-93. [Persian].
- King KM, King PJ, Nayar R, Wilkes S. Perceptions of adolescent patients of the "lived experience" of type 1 diabetes. *Diabetes Spectrum* 2017;30:23-35.
- Youssef-Morgan CM, Luthans F. Psychological capital theory: Toward a positive holistic model. In *Advances in positive organizational psychology*. Emerald Group Publishing Limited 2013.
- Luthans F, Youssef CM, Avolio BJ. *Psychological capital and beyond*. Oxford University Press 2015.
- American Psychiatric Association. *Diagnostic and statistical manual of mental disorders (DSM-5®)*. American Psychiatric Pub 2013.
- Gilbert P. Introducing compassion-focused therapy. *Advances in psychiatric treatment* 2009;15:199-208. doi:10.1192/apt.bp.107.005264
- Leaviss J, Uttley L. Psychotherapeutic benefits of compassion-focused therapy: An early systematic review. *Psychological Medicine* 2015;45:927-45. doi:10.1017/S0033291714002141
- Gilbert P. The origins and nature of compassion focused therapy. *British Journal of Clinical Psychology* 2014;53:6-41. doi:10.1111/bjc.12043
- Di Fabio A, Saklofske DH. The relationship of compassion and self-compassion with personality and emotional intelligence. *Personality and Individual Differences* 2021;169:110109. doi:10.1016/j.paid.2020.110109
- Neff KD, Bluth K, Tóth-Király I, Davidson O, Knox M, Williamson, Z, et al. Development and validation of the self-compassion scale for youth. *J Pers Assess* 2021;103:92-105. doi:10.1080/00223891.2020.1729774
- Craig C, Hiskey S, Spector A. Compassion focused therapy: a systematic review of its effectiveness and acceptability in clinical populations. *Expert Rev Neurother* 2020;20:385-400. doi:10.1080/14737175.2020.1746184
- Steffen PR, Foxx J, Cattani K, Allredge C, Austin T, Burlingame GM. Impact of a 12-week group-based compassion focused therapy intervention on heart rate variability. *Appl Psychophysiol Biofeedback* 2021;46:61-8. doi:10.1007/s10484-020-09487-8
- Sommers-Spijkerman MPJ, Trompetter HR, Schreurs KMG, Bohlmeijer ET. Compassion-focused therapy as guided self-help for enhancing public mental health: A randomized controlled trial. *J Consult Clin Psychol* 2018;86:101-15. doi:10.1037/ccp0000268
- Fox J, Cattani K, Burlingame GM. Compassion focused therapy in a university counseling and psychological services center: A feasibility trial of a new standardized group manual. *Psychother Res* 2021;31:419-31. doi:10.1080/10503307.2020.1783708
- Leaviss J, Uttley L. Psychotherapeutic benefits of compassion-focused therapy: An early systematic review. *Psychol Med* 2015;45:927-45. doi:10.1017/S0033291714002141

21. Bluth K, Eisenlohr-Moul TA. Response to a mindful self-compassion intervention in teens: A within-person association of mindfulness, self-compassion, and emotional well-being outcomes. *J Adolesc* 2017;57:108-18. doi:10.1016/j.adolescence.2017.04.001
22. Shafiei M, Akbari S, heidarirad H. The effectiveness of self-compassion training on the loneliness and resilience destitute women. *Shenakht Journal of Psychology and Psychiatry* 2019;5:71-84. [Persian].
23. Ghaffarian H, Khayatan F. The effect of compassion-based education on self-concept and self-expression of female high school students. *Knowledge and Research in Applied Psychology* 2019;19:36-26. [Persian].
24. Ferrari M, Hunt C, Harrysunker A, Abbott MJ, Beath AP, Einstein DA. Self-compassion interventions and psychosocial outcomes: A meta-analysis of RCTs. *Mindfulness* 2019;10:1455-73.
25. Zarei F. The effectiveness of compassion-focused therapy in the treatment of depression and glycemic control in patients with type 2 diabetes. Master Thesis in Clinical Psychology. University of Kurdistan 2014. [Persian].
26. Ahmadpour Dizaji J, Zaharakar K, Kiamanesh A. Comparison of the effectiveness of compassionate treatment and welfare treatment on the psychological capital of female students with emotional failure. *Scientific Journal of Women and Culture* 2017;9:7. [Persian].
27. Shiralinia K, Chaldavi R, Aman Elahi A. The effectiveness of compassion-focused therapy on depression and anxiety in divorced women'. *Clinical Psychology* 2016;10:9-20. [Persian].
28. Ahmadi R, Sajjadian I, Jaffari F. The effectiveness of compassion-focused therapy on anxiety, depression and suicidal thoughts in women with vitiligo. *JDC* 2019;10:18-29. [Persian].
29. Salimi A, Arsalandeh F, Zaharakar K, Davarniya R, Shakarami M. The effectiveness of compassion-focused therapy on mental health of women with multiple sclerosis. *Horizon Med Sci* 2018;24:125-31. [Persian].
30. Purewal R, Fisher PL. The contribution of illness perceptions and metacognitive beliefs to anxiety and depression in adults with diabetes. *Diabetes Res Clin Pract* 2018;136:16-22. doi:10.1016/j.diabres.2017.11.029
31. Cohen J. *Statistical power analysis for the behavioral sciences*. 2nd ed, United States of America, Lawrence Erlbaum Associates 1988;310-11.
32. Gilbert P. Introducing compassion-focused therapy. *Advances in Psychiatric Treatment* 2009;15:199-208.
33. Snyder CR, Sympson S, Ybasco F, Borders T, Babyak M, Higgins R. Development and validation of the state hope scale. *Journal of Personality and Social Psychology* 1996;70:321-35. doi:10.1037//0022-3514.70.2.321
34. Scheier MF, Carver CS. Optimism, coping, and health: Assessment and implications of generalized outcome expectancies. *Health Psychology* 1985;4:219-47. doi:10.1037/0278-6133.4.3.219
35. Parker S. Enhancing role-breath self-efficacy: The roles of job enrichment and other organizational interventions. *Journal of Applied Psychology* 1998;83:835-52. doi:10.1037/0021-9010.83.6.835
36. Wagnild GM, Young HM. Development and psychometric evaluation of the resiliency scale. *Journal of Nursing Management* 1993;1:165-78.
37. Luthans F, Youssef CM, Avolio BJ. *Psychological capital: Developing the human competitive edge*. Oxford, UK: Oxford University Press 2007.
38. Bahadori Khosroshahi J, Hashemi Nosratabad T, Babapour K. The relationship between social capital and psychological well-being in students of Tabriz university'. *Bi-Quarterly Journal of Social Cognition* 2015;3:44-54. [Persian].
39. Beck AT, Ward CH, Mendelson M, Mock J, Erbaugh J. An inventory for measuring depression. *Archives of General Psychiatry* 1961;4:561-71.
40. Beck AT, Steer RA, Brown GK. *BDI-II: Beck depression inventory*. 2nd ed. San Antonia: The Psychological Corporation 1996.
41. Beck AT, Steer RA, Garbin MG. Psychometric properties of the Beck depression inventory: Twenty-five years of evaluation. *Clinical Psychology Review* 1988;8:77-100.
42. Dozois DJ, Dobson KS, Ahnberg JL. A psychometric evaluation of the Beck depression inventory-II. *Psychological Assessment* 1998;10:83-9.
43. RajabiG, Attari YA, Haghghi J. Factor analysis of Beck questionnaire questions (BDI-21) on male students of Shahid Chamran university of Ahvaz'. *Educational Sciences* 2000;8:49-66. [Persian].
44. Ghadmpour E, Mansouri L. The effectiveness of compassion-focused therapy on increasing the level of optimism and compassion for students with generalized anxiety disorder'. *Psychological Studies* 2018;14:59-74.
45. Gilbert P. The origins and nature of compassion focused therapy. *British Journal of Clinical Psychology* 2014;53:6-41. doi:10.1111/bjc.12043
46. Diedrich A, Grant M, Hofmann SJ, Hiller B. Self-compassion as an emotion strategy in major depressive disorder. *Behavior Research and Therapy* 2014;58:43-51. doi:10.1016/j.brat.2014.05.006
47. Beaumont E, Hollins J. A narrative review exploring the effectiveness of compassion-focused therapy. *Counselling Psychology Review* 2015;30:21-32.
48. Lucre KM, Corten N. An exploration of group compassion-focused therapy for personality disorder. *Psychol Psychother* 2013;86:387-400. doi:10.1111/j.2044-8341.2012.02068.x
49. Kolts RL. *CFT made simple: A clinician's guide to practicing compassion-focused therapy*. New Harbinger Publications 2016.
50. Gilbert P. *Compassion focused therapy. The Beginner's Guide to Counselling & Psychotherapy* 2015;127.
51. Craig C, Hiskey S, Spector A. Compassion focused therapy: A systematic review of its effectiveness and acceptability in clinical populations. *Expert Rev Neurother* 2020;20:385-400. doi:10.1080/14737175.2020.1746184
52. Ramesh S, Ghazian M, Rafiepoor A, Safari AR. The mediator role of depression and anxiety in the relationship between cognitive emotional regulation and self-care in type 2 diabetes. *PSJ* 2018;16:37-45. [Persian].