

## Original Article

# The Effectiveness of Life Skills Training on Depression and Anxiety in Patients with Type 2 Diabetes

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## Abstract

**Background and aim:** Diabetes illness is one of the most common disorders in which psychological aspects play an important role in their development and development. Negative excitements such as anxiety and depression have been identified in diabetes. One of the ways to reduce negative emotions in patients is to teach life skills .The purpose of this study was to investigate the effectiveness of life skills training on decreasing depression and anxiety in patients with type 2 diabetes.

**Methods:** This quasi-experimental study was a trial and control group and a pretest design, a post-test with a three-month follow-up. The statistical population of all type II diabetic patients was referred to Ravand clinic of Kashan. In this study, patients who had more scores in the scale of depression and anxiety were selected according to entry criteria for a sample size of 30 people and were randomly assigned into two groups of experimental and control groups. The experimental group received 10 sessions of intervention in a group and control subjects were included in the waiting list. Both groups responded to the Beck Depression and Anxiety Scale before and after the experiment and were evaluated again after three months. To analyze the data, repeated measures variance analysis were used.

**Results:** The results showed that life skills training significantly decreased the level of depression ( $F = 10.70, P = 0.003$ ) and anxiety ( $F = 15.62, p = 0.001$ ), and the results were also observed in the follow up phase was stable.

**Conclusion:** In general, the use of life skills training helps to raise awareness and change the attitudes of people and, ultimately, reduce disease.

**Keywords:** Life skills training, Depression, Anxiety, Type 2 diabetes

## Introduction

Diabetes is a chronic metabolic disease and a great health problem, especially it is increasing in developing countries. Numbers of patients with diabetes in the world is more than 250 million generally, and It has been estimated that the number of patients increase to 350 million in 2020 and to more than 438 million in 2030 (1). The chronic form of diabetes affects patient's body, mind and social and individual performance. Therefore, the investigation of different dimensions of health is particularly important in these patients. Diabetes mellitus is a disorder that psychological aspects are involved in its growth and development. Several psychological factors have been identified in diabetes but meanwhile there is emphasize on negative excitement. Negative excitement, especially anxiety and depression are not only underlying causes of diabetes (2-5), but also

diabetes also forms emotional responses (6). Almost 65% of diabetic patients experience mood disorders such as anxiety and depression that makes it hard to treat them (7). Results of studies indicated that diabetes is source of many emotional problems and its effects may be manifested itself in various forms of behavioral and emotional such as depression and anxiety. Depression is one of the most prevalent problems and mental disorders that may be problematic for patients. According to the World Health Organization, depression is the second disease after cardiovascular diseases. This illness as a primary health problem in the world and is considered as the origin of many diseases, it imposes mental, educational, and economic costs to patients and society and because of its wide development it has been known as psychological common cold (8). The existence of depressed mood for at least two weeks is indicating depression as a disorder, usually associated with a decrease in

concentration, the difficulty back in decision making and irritability, or mental, behavioral impairment and feelings of guilt and thoughts about death. Various factors including biological agents such as neurotransmitters serotonin, norepinephrine, dopamine, genetics, and psychosocial factors such as life events play a role in developing depression. Recently various internal stressors such as changes in serum levels of cholesterol, triglycerides, glucose, coagulation factors are contributed with forming of depression (9). Depression, in addition to causing physical problems and relapsing some of the symptoms such as pain, is affecting person's ability to function and reduce them. It also reduces the power of decision making and the ability to care for themselves, as a result, the individual's independence is lost and dependence, disability and lack of confidence are being made. Anxiety is another important issue in the incidence of diabetes. Anxiety is one of the most common psychiatric disorders and feeling uncomfortable that cause unknown and vague hazard. Anxiety is followed by physical symptoms (such as hands and feet tremor, palpitations, nausea, diarrhea, and dry mouth), cognitive (such as decreased concentration, self-consciousness, confusion, fear of becoming mad), perceptual (such as depersonalization and changing reality) and behavioral (like irritability, staying immobile). Low levels of anxiety increase an individual's perceptions of the environment and his awareness of potential threats; but severe anxiety disrupt a person's behavior and prevents the logical response him. Life skills training is one of the effective ways to reduce depression and anxiety that confirmed by many researchers. Life skills include psychosocial abilities for effective and adaptive behavior that enable individuals to more effectively deal with the needs and challenges of everyday life. Life skills include the ability to set realistic goals, problem-solving, decision making and evaluation of its consequences, which are suitable for promoting personal and interpersonal skills. The acquisition of this set of skills is critical to address challenges of everyday life, such as organizing personal affairs, controlling health care, pursuing professional, educational, recreational, activities and engaging in

positive social interactions (10). Several studies have been conducted on effects of life skills training on different mental aspects and results have shown that training these skills has been effective on mental health and resulted improve in social skills, reducing depression, anxiety and stress (11-19). Life skills training in cases where a person suffers from a psychiatric/psychological or emotional disorder can play an effective role in mental health recovery and this training is appropriate for the prevention and treatment of mental health problems. Moreover, so far mental health interventions have not been specifically investigated particularly with the focusing on life skills training in type 2 diabetic patients. Therefore, the present study seeks to answer this question: Does life skills training affect depression and anxiety in type 2 diabetic patients?

## Methods

In this study, a semi-pilot with a pretest-posttest design with a control group was used. All type 2 diabetic patients referred to Ravand clinic of Kashan were recruited for this study. In this study, 30 diabetic patients available referred to Ravand clinic of Kashan, who were selected according to the criteria, randomly assigned into test and control groups. Inclusion criteria was people aged between 30 and 55 years and education level at least the third level of middle school and exclusion criteria were the mental and physical illnesses (complications of diabetes), receiving psychiatric treatment and psychological counseling during the study and history of life skills training which was extracted from the information contained in the clinical records.

Beck Depression Inventory and Beck Anxiety Inventory were used to collect data.

**Beck Depression Inventory:** This 21-question questionnaire developed and validated by Aaron Beck (20) and is being used in the clinics a lot. It includes 20 questions. Total scores can fluctuate between zero and 63. In this scale, the scores ranging from 0 to 9 are normal, 10 to 19 are signs of mild depression, 20 to 29 points mean moderate depression and score 30 and above are severe

depression symptoms. Beck and colleagues obtained the test retest coefficient 0.93 in one-week intervals. Mean correlation of Beck Depression Inventory with Hamilton Rating Scale for Depression, Zung self-rating scale, depression scale, Minnesota Multiphasic Personality Inventory, The scale of multiple emotional traits of depression is more than 0.60; while it is estimated from 70.0 to 90.0 in Iran by Khanzadeh et al (21). In this study, the Cronbach's alpha coefficient was evaluated 0.85.

**B. Beck Anxiety Inventory (BAI):** Beck Anxiety Questionnaire (BAI) created by Aaron T. Beck and other colleagues (1990), which specifically evaluates the severity of clinical anxiety symptoms in individuals. The test consists of 21 questions and measures the severity of anxiety in adolescents and adults. Each of the sections of this test describes a common symptom of anxiety (panic subjective symptoms). This test scores between 0 to 3 and the maximum score which it is obtained is 63 that indicates severe anxiety. The studies show that this questionnaire has high validity. Its consistency coefficient (alpha coefficient) is 0.92. The validity of this test is 0.75 with a re-test method and its correlation is between 0.30 to 0.76. Five types of content validity, simultaneity, structure, diagnosis, and factor have been evaluated for this test that all shows the effectiveness of measuring the severity of anxiety with this tool (20). Nemati Sogoli et al (22) measured the internal consistency of the questionnaire 0.93 and the coefficient of reliability of the three-week rehearsal 0.75.

After sampling and identifying the members of the test group (15 people) and the control group (15 people), an explanatory meeting was held and the objectives and principles of the research project was explained to the participants in a way that not lead to bias in the results and change in their actions. They were asked to fill in the questionnaires that was given to them in the research process carefully. Then, all participants in the study received a pre-test (depression and anxiety scale) at the same session. A week later, for 10 consecutive weeks, 10 sessions of life skills training were provided to the test group

(one session in a week), while the control group did not receive any training; One week after the intervention, all participants completed a post-test (depression and anxiety scale). After 3 months evaluation of following up was done (implementation of depression and anxiety scale). After selecting research samples and obtaining consent and declaring confidentiality the results of the research before the intervention began, both groups (test and control) responded to depression and anxiety questionnaires; the test group was subjected to group life skills training in 10 sessions for 90 minutes. During this period, the control group did not receive any intervention. After completing the treatment sessions, both groups (tests and control) again responded to Beck Depression Inventory and Beck Anxiety Inventory.

Data were analyzed using SPSS V.22 and analysis of variance test with repeated measuring.

## Results

According to Table 1, the mean amount of depression and anxiety in the test group in the post-test phase was reduced compared to the pre-test. In other words, life skills training cause decrease in depression and anxiety in patients with type II diabetes post-test in compare with control group.

Results of Table 2 indicate that life skills training in the test group was more effective in reducing depression and anxiety in compare with control group. This effect size was 0.27 for depression and 0.35 for anxiety.

Based on the results of Table 3, the difference in mean of depression and anxiety between the stages of pre-test, post-test and follow-up of the test group is significant, but the difference between post-test and follow-up in the research variable is not significant, which indicates that results obtained in follow-up level had no relapse and effect of sustained intervention was remained.

## Discussion

Results of this study showed that life skills training reduced depression and anxiety in patients with type

2 diabetes. These results are consistent with other studies (11-15, 17, 19, 23-25).

Generally, training skills such as proper communication methods enable a person to develop the ability to act according to his own criteria and achieve the desired outcomes in a particular situation. In addition, it increases one's knowledge and strengthens his positive beliefs; all of these factors cause that disruptive factors of mental health does not form in an individual; most mental disorders seem to be due to the inability to act based on their own criteria and also lack of sufficient knowledge and wrong beliefs about yourself and the world around you.

Learning makes people more aware of themselves, recognize their strengths and weaknesses, and to obtain a degree of self-knowledge that correct their weaknesses and improve their strengths; thereupon, a person accepts the facts of his physical condition better and this leads to increase in adjustment and lowering of psychological pressure (23).

In general, successful learning of life skills influences the learner's feelings about oneself and others and causes enhanced psychosocial abilities and reduces anxiety symptoms. These abilities helps face with conflicts of life and providing mental health. Since life skills training is done in a group, this can also have a positive effect on reducing stress and anxiety (23), because people are gathering in a group, they feel others have similar problems with them and can use the experiences of each other to face with anxiety. On the other hand, anxiety is due to lack of skill and predict the position (19), life skills training makes people more aware of themselves and recognize their strengths and weaknesses and act to correct weaknesses and strengthen their powers. Creating awareness of the strengths and weaknesses helps a person to deal better with problems and thus reduce his anxiety (13).

Botulin and Griffin (18) believe that life skills training program teaches social resistance skills and increased individual and social competence. The next factor is to hold the training course in a group.

This can have a positive effect on reducing stress and anxiety, because the aggregation of the people in the group and the fact that others feel similar problems and the group can use their experiences to counteract stress and effectively reduce anxiety (18). In addition, those who believe that they have helping resources when facing anxiety arising from disease, show less vulnerability to the stress of the disease, with proper knowledge of the strategies for controlling the anxiety caused by the disease, they are able to challenge the problems and change their perceptions of the issues, improve self-control skills and in the end reduce the anxiety and harmful consequences of the disease. This process effectively promotes health and disease prevention (26).

In one hand, reviewing the content of educational sessions suggests that most of the activities of this course have addressed different dimensions of social issues. In other words, most activities, such as effective communication methods, familiarity with verbal and non-verbal communication methods, increased emphasis on behavior etc. have contributed to increasing individual efficiency in social relationships, and has led to a reduction in problems with this issue. Improvement of the social status and communication with the surrounding people have removed the individual from the unpleasant situation of isolation and loneliness and reduces ones preoccupation to negative thoughts about their disease. The program of life skills training increases personal self-efficacy by developing skills such as proper decision making and problem solving, creative thinking and critical thinking, social communication skills, and facing with difficult situations, thereby helping to increase social adjustment (19). One of the most important results of improving and increasing life skills is helping them to adapt. (23). Diabetes mellitus can cause symptoms of depression and endangers person's mental health; therefore, life skills training helps them to recognize and carefully evaluate their emotions well and understand rational and irrational thoughts related to them and finally, it is clear to them that efficient and inefficient thoughts, positive and negative emotions navigates them (14). When

the people come to the consciousness that they themselves and their perceptions influence the positive and negative emotions and, therefore, they control their emotions with their learned skills and reach emotional adaptability that prevents depression. Having appropriate personal relationships means the ability to do well in life, satisfaction from yourself and others and the level of social support. These trainings affect the learner's thinking and feelings about themselves and others and promote psychosocial skills, It reduces the symptoms of depression; it helps the person to effectively deal with the conflicts of life and provides him with mental health (23).

In the end, it is worth noting that according to the research results and the effect of life skills training on decreasing depression and anxiety in patients, it is suggested that this model is being used in nursing homes education programs to improve knowledge and change the attitude of people. Also, this method can be suggested to psychologists, psychiatrists, counselors, workers and all medical professionals in health care centers in order to reduce depression and anxiety of these types of patients. It is suggesting that in the therapeutic use of this method, specialists will have more courses and more sessions and more exercises in the desired subjects.

Limitations of this study included: the study was only done on patients with type II diabetes Ravan clinic of Kashan which limits the generalizability or external validity of the study. There are also uncontrolled variables such as lifestyle, economic status, education level, etc. and their interaction in the desired research cause limitation in generalizability.

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## Tables

**Table 1.** Measure the mean of depression and anxiety in three stages for the test and control group**Table 2.** Rapid measuring variance analysis test of depression and anxiety score with Greeanhouse Gyser criteria

Variable	group	Follow up		Post-test		Pre-test	
		Standard deviation	mean	Standard deviation	mean	Standard deviation	mean
depression	test	2.19	29.60	1.88	29.86	1.94	33.06
	control	2.16	32.86	2.19	33.33	1.88	33.13
anxiety	test	1.38	35.73	29451	36.46	1.37	38.80
	control	1.99	39.46	2.66	39.13	1.94	39.06

Variable		Sources of changes	Total of squares	Degree of freedom	Mean squares	F ratio	Significance level	ETA square	Test power
Depression	Intragroup	Test (measuring repeat)	58.68	1.61	36.45	32.40	0.000	0.53	1.00
		Group test contraction	54.60	1.61	33.91	30.14	0.000	0.51	1.00
		Error	50.71	45.08	1.12				
	Intergroup	Group (experimental variable)	115.60	1	115.60	10.70	0.003	0.27	0.88
		error	302.35	38	10.79				
Anxiety	Intragroup	Test (measuring repeat)	31.02	1.53	20.18	9.40	0.001	0.25	0.93
		Group test contraction	47.28	1.53	30.76	14.33	0.000	0.33	0.99
		Error	92.35	43.03	2.14				
	Intergroup	Group (experimental variable)	111.11	1	111.11	15.62	0.001	0.35	0.96
		Error	199.11	38	7.11				

**Table 3.** Bonferroni post hoc test results in three stages: pre-test, post-test and follow up

Post-test and Pre-test			Pre-test and follow-up			Post-test and follow-up			Statistical indicators
P value	Standard deviation	difference in averages	P value	Standard deviation	difference in averages	P value	Standard deviation	difference in averages	
0.000	0.29	1.86*	0.000	0.23	1.50*	0.22	0.19	0.36	depression
0.002	0.34	1.33*	0.02	0.39	1.13*	0.99	0.22	0.20	anxiety