

## The Effectiveness of Problem Solving Therapy on Coping Skills in women with type 2 diabetes

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**Objectives:** Since problem solving group training is a comprehensive, active program and based-on cognitive behavioral approach, the aim of present study was to determine the effectiveness of problem solving therapy on depression and coping style in patients with type 2 diabetes mellitus.

**Methods:** In an experimental design the study was done with pretest-posttest with control group. Totally 30 female clients who had inclusion criteria with score of 20-28 in Beck Depression Inventory was selected from Prophet Mohammad hospital in Tehran and divided to two groups. Then coping skills questionnaire was completed by experimental and control group. The experimental group participated in seven sessions on problem solving therapy, while the control group received no intervention. T-test analysis and variance analysis with repeated measures on one variable were used for data analysis.

**Results:** The results of variance analysis show that teaching problem solving therapy on Zurilla and Goldfried model lead to significant reducing emotion focused coping skills and significant increasing problem focused coping skills among patients with type 2 diabetes on the experimental group. The results also indicated significant reducing depression between this individual in experimental groups.

**Discussion:** The results of this study indicated that problem solving therapy could be effective way for improvement coping skill and reducing depression in patients with type 2 diabetes mellitus.

**Keywords:** problem solving therapy, coping skills, type 2 diabetes

Submitted: 10 January 2014  
Accepted: 16 February 2014

### Introduction

Diabetes is a syndrome in which the metabolism of carbohydrates, fats and proteins is disrupted due to a lack of insulin or a decreased sensitivity of tissues to insulin is provided. Two major types of diabetes are: Type I diabetes, also called insulin-dependent diabetes mellitus is caused by a lack of insulin secretion, Type II diabetes is non-insulin dependent diabetes, occurs when the target tissues sensitivity on the metabolic effects of insulin is reduced. In Type II diabetes, the risk of many other diseases are more advanced such as heart disease-cardiovascular and stroke, hypertension, retinopathy, blindness, kidney disease and neuropathy (1) and is expected that due to the increasing lack of exercise and obesity, its prevalence is rapidly increasing (2). Diabetes and patients requiring special care of their daily lives, which leads to many challenges that use of coping strategies to adjustment will be necessary (3). Coping strategies may play an important role in

the development, management, and treatment of social and psychological adjustment in diabetes (4, 5). Influence of stress like diabetes on the individual depends on the factors' characteristics and cognitive evaluation strategies and methods of coping, that individual employ in coping with stressful consequences. If Coping strategies and assess are appropriate, will facilitate adaptation to new circumstances and person will adapt to the new situations. But if psychological coping strategies are inappropriate or insufficient, individuals should Search more coping and support resources for the new and suitable design of the stressful position, and this may be lead to different reaction and psychiatric disorders (6). Finally, the individual must use appropriate coping strategies for reducing stress and make adapting (7).

Nezu believe that education and implementation of problem-solving skills, led to purposeful policy that

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through on people define the problem, generate different solutions and decide to choose the best solution and hereby show their strategies to resolve (8). Much research suggests that problem-solving skills play an important role in mental and physical health, especially when people are faced with the unpleasant events and negative life stressors (9). Since problem solving group training is a comprehensive, active program and based-on cognitive behavioral approach, then we need if the results of this study be confirmed, we can use their results for psychologists and mental health professionals in order to help Type II diabetics' patients and therefore prevent increasing the patient's care costs.

As the most studies has been done on Glycemic control, quality of life, self-management, social support, adjustment, etc. in patients with diabetes, and little research is discussed on the effectiveness of problem solving therapy, the aim of this study is to investigate the effectiveness of problem solving therapy on coping skills in woman with type 2 diabetes, and find out if group training based on problem solving therapy decrease emotion-focused and increase problem-focused coping skills in woman with type 2 diabetes.

### Methods

In an experimental design the study was done with pretest-posttest with control group. Totally 30 female clients who had inclusion criteria with score of 20-28 in Beck Depression Inventory was selected from Prophet Mohammad hospital in Tehran and divided in both control and experimental groups. The inclusion criteria are the participants contain range of 60-30 years old and being alliterated and exclusion criteria

are absence of more than two sessions, the history of psychiatric disorder and appearance of disability as amputation, blindness and so on. Then, with explanations about how and why doing this research, coping skills questionnaire was completed by them. The intervention group participated in seven sessions on problem solving therapy, while the control group received no intervention. Problem solving consists of seven steps include identifying the problem, defining the problem, gathering diverse solutions, evaluate the positive or negative aspects of each solution, decision making, implementation and identification of effect of solutions. At the end of sessions both groups were assessed by post-test and were measured the impact of training of these skill in people with diabetes. Data was collected by means of demographic information inventory and Moss & Billings Coping Skills Questionnaire that included 19 phrase that evaluated two major ways of coping inclusive emotion-focused coping skills with eight and Problem-focused coping skills with eleven phrases. Having High scores in each section indicate greater using of that way of coping (10). The control group received the intervention after the end of post-test assessment and data was analyzed with SPSS-16.

### Results

The results of two-variable analysis of variance with repeated measures data for one variable related to comparison of scores difference average between intervention and control groups of patients with type 2 diabetes in emotion-focused coping skills in pre-post test and post test - follow up stages are shown in table (1). This shows that two groups are matched for the study.

**Table 1.** Comparison of scores difference average between intervention and control groups

Source	SS	df	Ms	F	(p value)
Between Groups					
(Groups) A	32.267	1	32.267	41.788**	0.001
Between Groups subjects	41.467	28	1.481		
Within Groups					
(Stage) B	166.667	1	166.667	27.822**	0.001
(Groups ×Stage) AB	117.600	1	117.600	19.631**	0.001
Within Groups subjects×B	167.733	28	5.990		

A= experimental group/ Pretest

B= control group/ posttest

*p*>0.001

Overall, results indicate that problem solving therapy had a significant effect on reducing the tendency of patients with type 2 diabetes to using emotion-focused coping skills, and this effect is higher in pre-post test stage as compared to post test-follow up stage. Table (2) shows because F calculated for the A agent (Groups,19.921) is

significant in 0.01 level, so the null hypothesis was rejected and concluded that there are significant differences between the scores difference average of patients with type 2 diabetes in intervention and control groups in problem -focused coping strategies.

**Table 2.** Comparison of scores difference average between intervention and control groups in problem-focused coping skills in pre-post test and post test - follow up stages

Source	SS	df	Ms	F	(p value)
Between Groups (Groups) A	60	1	60	19/921**	0/001
Between Groups subjects	84.333	28	3/012		
Within Groups (Stage) B	180.267	1	180.267	67.782**	0/001
(Groups ×Stage) AB	147.267	1	147.267	55.373**	0/001
Within Groups subjects×B	74.467	28	2.66		

A= experimental group/ Pretest  
 B= control group/ posttest  
 p>0.001

This means that the average difference between the scores of patients with type 2 diabetes of intervention group in emotion-focused coping strategies, after learning problem solving therapy showed more reduction in pre-post test stage as compared to post test- follow up stage in these group and each two steps in the control group. Overall, problem solving therapy had a significant effect on increasing the tendency of patients using problem-focused coping skills, and this effect is higher in pre-post test stage as compared to post test-follow up stage.

### Discussion

One hypothesis of research was about the impact of problem solving therapy training on reducing emotion-focused coping strategies in the experimental group compared with the control group which was confirmed. In support of this hypothesis, it may be argued since problem solving occur in cognitive levels and cognitive assessment, it is a main component of teaching problem solving, so we can interpret a person's negative thinking about the difficulties of solving such as problems in solvable and thinking about the problem is not working or difficulties solving by itself, are negative thoughts and cognitive assessments that are trying to resolve during the problem solving process. According to many researches on 80 subjects who had attempted

to commit suicide and their families in Vali-asr hospital in Arak and also, research on effectiveness of problem solving therapy training on reducing depression and coping style reinforcement to young people 15-18 old age (9, 11).

In this way, a certain amount of cognitive and intellectual reconstruction occur which can help people to recognize the difficult situations and why these situations happen and the result is being firstly ready and positive expected in people. So we can conclude reducing emotion-focused strategies in these patients are the outcome of cognitive assessments that has taken place the result of problem-solving training. On the other hand it can be said understanding and thoughts are being tracking at different levels that are beginning like a chain negative automatic thoughts and is promoted the end chain that are schemata. Usually people learn habitually how to think and it's limited person to assess the correct and logical thoughts of recognition and thoughts in real situations; There are maintained, automated and involuntary tendency to think and act this way, Because of the habitually nature of this beliefs (1, 2). In addition to reducing depression, one important aspect of the training problem solving techniques is changing expectations and attitudes in people that lead to increasing problem-focused and reducing emotion- focused

confrontation. Also, it increased sense of self-confidence and personal skills confidence to deal with stressful situations.

The second assumption of research was approved; it was about affect of teaching problem solving therapy on increasing problem-focused coping strategies in the experimental group compared with the control group. Analyzes performed to demonstrate the effectiveness of problem solving therapy based on increasing problem-focused coping skills, consistent with other research in this field. Nezu define problem solving style as a process cognitive-behavioral by which people identify and discover effective strategies for dealing with stressful situations in daily life. According to this view, firstly problem solving is a process of conscious coping, hardworking and purposeful logic that increase person's ability for problem-oriented coping with a wide variety stressful situations (13). For example research results by Graves, Meyers and Clark about efficacy of problem solving therapy on fat children's show that use of this training for parents and children was useful in weight reducing in these children (14). Study results by Hartman and Associates were conducted on 60 women with breast cancer show that problem solving therapy has led to increasing problem-focused strategy and social support in patients (15). Considering that this treatment is effective in the same physical problems, it is likely that the effect explanation in this group was being applied in patients with type II diabetes. With notice of above studies results, we can conclude that one of the important aspects of

training in problem solving is changing expectations and attitudes of people which lead to enhancing problem-oriented and reducing emotion-focused coping. Also this increases the sense of self-efficacy and confidence to personal ability to deal appropriately with stressful situations.

In both hypotheses, recurrence was observed in posttest-follow up stage in compare of pre-post test. In Explaining recurrence of observed changes in both hypotheses (effect of problem solving therapy on emotion and problem-focused coping) in post test-follow up stage in compare of pre-post test can be cited to cognition proves nature that needs practice and change thinking method from non-logical style to logical style then, to reach this goal need internalizing problem solving skill in persons. Because knowledge alone may not be sufficient to make concrete and real reform and convert what is theory to act, and in fact, learning problem solving skills will create change in cognition need to training and employing methods of problem solving in everyday life, then repeating an action, consequently changes attitude. Finally we can say relapse in mentioned variables in post test - follow-up stage due to the need for more training, deployment and institutionalization of these skills in everyday life. The results of these studies can show efficacy of problem solving skills in statistical and clinical changes depression and coping strategies. As the sample has been selected from diabetic patients in a hospital, the results should be extending with caution.

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