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Review Article

The Effectiveness of Problem-Solving Therapy on Anxiety in Patients with Diabetes

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Abstract

Background and purpose: This study aimed at investigating the effectiveness of problem-solving therapy on anxiety. Diabetes is a chronic disease with an increasing prevalence. Psychiatric problems are more common in diabetic patients than in the general population, affecting the prognosis and success of treatment .Problem-solving therapy is a short-term psychological intervention that can be used alone or with other therapeutic approaches.

Methods: This case study was performed on four patients with diabetes who were selected based on available sampling . The DASS-21 questionnaire, which was answered by the subjects during three stages of pre-test, post-test, and two months after training as a follow-up, was used to collect data .First, these patients responded to the questionnaire in the baseline. Then, they were treated for problem-solving therapy for six sessions of 90 minutes and then answered again.

Results: The studied data through descriptive statistics and analysis of variance with repeated measures showed that the score of individuals in the post-test stage had a significant decrease on this scale .A review of the data collected in the follow-up phase shows that problem-oriented treatment somewhat reduces anxiety and the resulting changes are relatively stable.

Keywords: problem-solving therapy; anxiety

Psychiatric problems are more common in diabetic patients than in the general population and can be effective on prognosis and success of treatment.

Diabetes is a metabolic disease associated with partial or absolute insulin deficiency, increased glucose, disorders of carbohydrate, fat, and protein metabolism that disrupt the normal flow of life .It can have significant psychological consequences; psychiatric problems are more common in diabetic patients than in the general population and can be effective on prognosis and success of treatment. (Namazi, Tari'at and Ayyari, 2011).

The prevalence of diabetes in communities is 3-5%, but it is significantly higher in some societies. The diabetes prevalence is 7%, with 13% hidden diabetes in the adult population. Approximately 20% of the Iranian population have diabetes or are susceptible to it (Brownell, 2002).

Daily control of diabetes in the first place is the patient's responsibility. Appropriate support and empowerment should be done in the field of self-control of the disease .Self-control enhancement interventions are most effective when they are patient-centered and tailored to each patient's needs. Controlling lifestyle elements is more complicated and damages their quality of life than medical elements in people with diabetes. However, with optimal medical treatment and proper self-control, people with diabetes can enjoy a healthy life for many years. (Alder et al., 2010)

Diabetes, along with complications such as retinopathy, nephropathy, and neuropathy, causes several psychological and behavioral complications that widely affect patients' quality of life .This effect can result from dietary changes, permanent dependence on medication, short-term or long-term complications of the disease, and their associated costs (Braunwald & Fauci, 2001)

According to studies, the risk of depression and anxiety in diabetes doubles (Collins, 2009).

Anxiety is considered response and adaptation to stimuli, and its absence sometimes poses severe risks to humans. However, if anxiety exceeds its

balanced limits and persists, it can no longer be considered compromised, but it should be regarded as a source of helplessness (John Bozorgi, 2000).

Problem-solving learning prepares a person to make difficult decisions in real life. Problem-solving from a psychological perspective is a mental search in the problem space and the transition from the existing state to the desired state (Kharazi, 1993). Recent studies have shown that the type of coping strategy used by the individual is mental health and affects his physical well-being. (Piko, 2001).

The primary purpose of this study was to investigate the effectiveness of problem-solving therapy on anxiety in diabetic patients referred to the Diabetes Center of Taleghani Clinic in 2017 .Given what has been mentioned so far, it is evident that the findings of this study can explain the effectiveness of problem-solving skills training on anxiety.

Literature Review

The results of Hanson-Mintz (2006) showed a significant relationship between constructive problem-solving styles and subjective well-being . In other words, problem-solving is one of the predicting variables of trust, creativity, and positive perception .Additionally, problem-solving plays an important role in reducing stress and consequently providing mental health and mental well-being .In contrast, counterproductive problem-solving styles pose a severe threat to subjective well-being and increase avoidance perception of problematic situations.

Babapour Kheireddin et al. (2003), in their research entitled the relationship between problem-solving methods and psychological health of students, showed that there is a significant relationship between problem-solving methods and psychological health.

There was no significant difference between the two groups in avoidance style and no significant difference was found between the two genders in other problem-solving methods .The relationship between problem-solving avoidance methods and psychological health is adverse among the different results. Students who use constructive problem-solving methods have higher levels of psychological health.

Borstein (2003) showed that one of the important well-being indicators is problem-solving ability .Borstein pointed out that self-efficacy, self-assessment, and timely diagnosis of problem-solving situations are among the criteria by which personal well-being and mental health can be estimated .Ireland et al. (2005) showed that the type of coping strategy used by the individual affects his mental health and his physical well-being.

Chinau (2010) showed that there is d significant relationship between problem-solving styles of helplessness, inhibition, and avoidance with subjective well-being.

Hamdzadeh et al. (2012), in their research entitled Coping Styles and Self-Care Behaviors in Patients with Diabetes, showed that staff of diabetes health centers, especially nurses, take appropriate steps by encouraging patients to use effective methods and methods of coping with stress in promoting self-care in diabetic patients and adapting to this chronic disease.

Mahboubeh Vala et al. (2015,) in their research titled Mindfulness-Based Stress Reduction Group Training on Depression, Anxiety, Stress, Self-Esteem, and Hemoglobin A1c in Young Women with Type 2 Diabetes, showed that Depression, anxiety, stress and self-confidence are related to Hb A1c levels. Mindfulness-based stress reduction therapy can effectively reduce some psychological disorders in patients with type 2 diabetes, increase self-esteem, and control patients' sugar.

Hiromitsu (2015) showed that teaching problem-solving skills in childhood has a positive effect on people's mental health in adulthood.

Kakabari and Moradi (2017) conducted a study entitled Family-Centered Problem-Solving Education to Parents and its Effect on Children's Perception of Parents.

The results showed that according to the children's report in three stages of pre-test- post-test (three-month interval) and follow-up (one-month interval), there was a significant difference between pre-test-post-test scores in child-parent perception subscales. Still, there was no significant difference between post-test-follow-up scores in child-parent perception subscales in the experimental group. Accordingly, it can be concluded that family-centered problem-solving education to parents was effective on child-parent perception and improved child-parent perception.

Research Methodology:

Given the applied purpose and the method of its implementation, the method of this study is a single subject with a pre-test and post-test design with follow-up, which is presented in the diagram below.

Pre-test	Independent variable	Post-test	Follow-up test
T1	X	T2	T3

Table 1: *Research Diagram*

Dependent variable: anxiety

Independent Variable: Problem Solving Treatment

Statistical population, sample size, and sampling method*:*

The statistical population of this study includes all diabetic patients referred to the diabetes center of Taleghani Hospital in Kermanshah province in 2017-2017. After informing and placing an advertisement in this center for sampling, four people from the patients referred to the diabetes center were selected by the available sampling method and participated in problem-solving treatment sessions.

The instrument used in this study was the DASS-21 questionnaire developed by (Levi Band Volvo Band, 1995) and standardized by Dr. Ali Sahebi, Mohammad Javad Asghari, and Marzieh Sadat Salari. This test measures three scales anxiety, depression, and stress. Each scale includes 7 items that are scored on the Likert scale from zero to three degrees (at all = zero, very high = three), so the total number of items is 21.

Internal consistency of DASS-21 scales was calculated using Cronbach's alpha, and the following results were obtained: Depression Scale 0.77, Anxiety Scale 0.79, and Stress Scale 0.78.This study aimed to validate the Persian version of DASS-21 for the Iranian population. The internal consistency of the test was satisfactory. It was approximately equal to the internal consistency of the 21-item version of the original DASS (internal consistency calculated for a normative sample of 717 was: Depression subscale 0.81, Anxiety subscale 0.73, and stress subscale 0.81(Levy Band Volley Band, 1995).

The sample was selected to give patients referred to the Diabetes Center brief information about the research design, its objectives, and treatment methods. Finally, those who participated in the research received problem-oriented treatment for 90 minutes per week for six sessions. Patients answered the DASS_21 questionnaire both at baseline and immediately after the intervention. The intervention program was performed in a group and in a calm environment approved by all subjects

(a room in the diabetes center). After two months, the test was performed again to follow up on the status of the subjects.

Data analysis was performed on two levels of descriptive and inferential statistics. In descriptive statistics, frequency, mean and standard deviation tables were investigated. Then inferential statistics were used to test the differences between periods in the rate of change in anxiety using repeated measures analysis of variance. All analyzes were performed using SPSS_21 software**.**

Anxiety	Intensity
7-0	**Normal**
9-8	**Mild**
14-10	**Medium**
19-15	**Severe**
+20	**Very intense**

Table 2: *The method of scoring anxiety in the DASS-21 questionnaire*

Follow-up		Post-test		Pre-test		Scale
Standard Deviation	**Average**	**Standard Deviation**	**Average**	**Standard Deviation**	**Average**	
4/83	8	5/37	7/75	7/39	10	**Anxiety**

Table 3: *Mean and standard deviation of 4 participants in the pre-test, post-test, and follow-up stages in the anxiety variable*

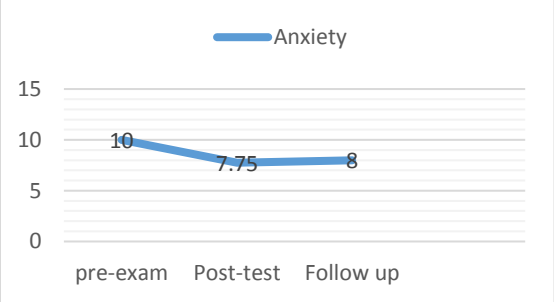

Figure 1: *Average scores of 4 participants in the pre-test, post-test, and follow-up stages*

Inferential statistics:

The table below shows the results of Mauchly's Sphericity Test. Mauchly's Sphericity Test tests the null hypothesis that the covariance matrix is an error related to the normal dependent variables of an identical matrix.

In this test, if the significance level is smaller than 0.05, the assumption of H0 is rejected and the assumption of H1 is confirmed.

If the H0 hypothesis is rejected, the power view of the sphericity variance-covariance matrix of the dependent variable is accepted, and the other three Greenhouse-Geiser, Hyun-Felt, or lower limit tests must be used. These tests correct the degree of freedom.

(Normalizer test) Epsilon			Significant level	df	Chi-Squared	Mauchly W	Measuring	Internal effects of subjects
Low limit	Huynh Feldt	Greenhouse Geisser						
0/500	0	0	0	2	0	0	Anxiety	Time

Table 4: *Results of Mauchly's Sphericity Test.*

The table below shows the results of the Leven test for measuring the equality of variances of time-varying error at different times calculated for all times examined. As can be seen, the significance level (Sig) is less than 0.05.

Significance level	df2	df1	Frequency	
0	0	3	0	**A1**
0/01	0	3	0	**A2**
0/01	0	3	0	**A3**

Table 5: *Leven test result*

Discussion & Conclusions

This study aimed to investigate the effect of problem-solving therapy on anxiety in people with diabetes.

Accordingly, the results of our research showed that problem-solving therapy reduces anxiety. In other words, due to problem-based therapy,

there is a significant difference in baseline and intervention stages between people's scores in this variable.

These findings were in line with the results of the research of Hossein Lotfinia et al. (2007), Fazl A. Fatemiyan Rad et al. (2015), Mainrs - Wallis (2010), Hiro Mitsu (2015), Ireland et al. (2005) and Borstein (2003). Also, our findings corroborated the results of Narges Zamani, Ali Brahmand, and Mehran Farhadi (2017), that showed that problem-solving skills training could be used as an intervention to moderate anxiety because the level of anxiety in the intervention group has decreased significantly ($P<0.001$).

Comparing the post-test and follow-up stages, scores for most individuals on all scales have not changed significantly, indicating the significant persistence of changes resulting from problem-solving therapy in the follow-up phase. These findings are in line with the results of Shokouhi Yekta et al. (2014) and Kakabrai (2015).

The results of several studies show that people who are more able to solve problems are less depressed and less exposed to stress, have high social skills, and have lower levels of anxiety than others (Salami S.O., Armo E.O., 2006).

According to the positive results obtained during this study and the various psychological problems of patients with diabetes, it is suggested that to increase patients' mental health; psychosocial care is provided to them and their families in special centers inside the diabetes center to provide counseling services.

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References

1. Kharrazi, Alynaghi. (1993). Problem Solving and Learning Method, Journal of Educational Sciences.
2. Zamani, Narges, Barahmand, Ali, Farhadi, Mehran (1396). Evaluation of the effectiveness of problem-solving training in reducing nursing students' anxiety. Journal of Nursing Education. 6(3).
3. Shokouhi Yakita, Mohsen. Zamani, Nyreh, Pour karimi, Javad. (1393). The effectiveness of interpersonal problem-solving skills training on increasing social skills, reducing behavioral problems of late students of first grade of primary school, psychological studies, Faculty of Educational Sciences and Psychology, Alzahra University. 10(4).
4. Shokouhi Yakita, Mohsen. Parand, Akram. Akbari Zardi Khaneh, Sayid. (2014). Effectiveness of problem-solving skills training on stress and parenting style.Journal of Knowledge and Research in Applied Psychology, 15th year, No. 3, Autumn 2014, (Successive). 57:45-53.
5. Fatimid Rad, Fazlollah. Mastamanbat, Najma, Zol-Adl, Mohammad. (2013). The effect of teaching coping methods on stress, anxiety and depression in specific patients. Armagan Danesh, Journal of Yasuj University of Medical Sciences, Volume 18, No. 9, January 2014 (Successive Number 81).
6. Babapour Kheireddin, Jalil. Rasoulzadeh Tabatabai, Seyed Kazem. ejei, javad. Fathi Ashtiani, Ali. (1382). The Relationship between Problem Solving Methods and Students' Psychological Health, Journal of Psychology, Tarbiat Modares University, No. 1.
7. Hamdzadeh, Saeed, Ezzati, Jaleh, Nasiri, Navid. (1391). Coping styles and self-care behaviors in patients with diabetes, Journal of Nursing Care Research Center, Tehran University of Medical Sciences (Iranian Journal of Nursing). 25(80).
8. Kakabarie, Kayvan. Moradi, Alireza. (2017). Psychology quarterly of exceptional subjects. 7(25):175-202.
9. Lotfinia, Hossein. Yekeh yazdandost, Rokhsar. Asghar Nejad, Ali Asghar. Gharaie, Banafsheh. Grossi, Mir taqi. (2009). Effectiveness of problem-solving therapy in reducing the severity of depression in students. Medical Journal of Tabriz University of Medical Sciences. 31(4)58-54.
10. Wallis, Lawrence Minors. (2010). Practical guidance for problem-solving treatment related to depression and anxiety, translators: Mahmoud Aliki, Mohammad Abbaszadeh Nasrabadi (2010). 1st Edition, Tehran: Danesh Publications.
11. Kakabrai, Keyvan. (1394). The Effect of Family-Centered Problem Solving Education on Parent-Child Relationship of Elementary Students, Chapter on Counseling and Psychotherapy Culture. 7:26.
12. Alder, Idol. Porter, Mike. Abraham, Charles. Tijlingen, Edwin van. (2010). health Psychology. Translator: Farzin Rezaei (2010). Tehran, Arjmand Book Publishing.
13. Jan bozorgi M. The effect progressive relaxation on agents of Trait anxiety. {MSc Thesis}. Tehran: Medical sciences faculty ، Tarbiat Modarres University. 2000: {In Persian}.
14. Braunwald E, Fauci AS. Kasper DL, Longon DL, Jameson JL (editors). (2001). Harrisons Principles of international Medicine. 15th edition. New York: McGraw-Hill.
15. Brownell KD, Cohen LR. (2002). Adherrence to dietary regimens: An overview of research. Behav Med. 20:54-149.
16. Ireland, J.L, Boustead R & Ireland C. A. (2005). Coping style and Psychological health among adolescent prisoners: a study of young and juvenile offenders. Journal of Adolescence. 28:411-423.
17. Burnstein M.H. (2003). Well. Being positive development across the life course. Mahavah : Lawerence Erlbaum.
18. Chinaveh M. (2010). Training problem- solving to enhance quality of life: implication towards diverse learners. Procedia-social and Behavioral Sciences. 7(1):302-310.
19. Hiromitsu, M. (2015). Problem Solving during Infancy and Early Childhood, Development of Problem Solving skills, International Encyclopedia of the Social & Behavioral Sciences (Second Edition).
20. Piko B. (2001). Gender differences and similarities in adolescents ways of coping. Psychological Record. 51:223-230.
21. Hantson K.M & Mints L.B. (2006). Psychological health and problem-solving, self appraisal in older adults. Journal of Counseling Psychology. 44(2):433-442.