



Research Paper

The Effectiveness of Hope Therapy on Resilience and Psychological Hardiness of Women With Type 2 Diabetes



Negar Pilban¹, Asieh Gharedaghi², Mahdi Mahbod³, Fatemeh Sadat Fatemi Shahrabak⁴, Samaneh Hajiabbasi⁵, Javad Jafari²

1. Department of Psychology, Faculty of Psychology and Educational Sciences, Shiraz Branch, Shiraz Azad University, Shiraz, Iran.

2. Department of Psychology, Faculty of Psychology and Educational Sciences, Allameh Tabatabaee University, Tehran, Iran.

3. Department of Psychology, Payame Noor University, Shiraz, Iran.

4. Department of Psychology, Payame Noor University, Baft, Kerman.

5. Department of Psychology, Faculty of Psychology and Educational Sciences, Karaj Branch, Islamic Azad University, Karaj, Iran.



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ABSTRACT

Background: For public health and the quality of life, the prevention of chronic diseases is vital and requires new prevention programs. This study aimed to determine the effectiveness of hope therapy on resilience and psychological hardiness among women with type 2 diabetes referred to as diabetes association in Tehran.

Materials & Methods: This study used a quasi-experimental method and a pre-test-post-test with a control group in an experiment conducted. Women with type 2 diabetes comprised the statistical population of this report. Purposive sampling was used to choose 30 people from the medical centers of Tehran's regions 6, 3, and 15. This study's data collection tools were two standard questionnaires of the Connor-Davidson resilience scale (CD-RISC) and Kobasa (1988) hardiness questionnaire. Then they were assigned randomly to the two control (n=15), and experimental (n=15) groups. The experimental group received hope therapy training for 8 treatment sessions (90 minutes for each session). Research data were analyzed using statistical software, version 21.

Results: The results indicated a significant difference between the two groups when pre-test effects are removed from the post-test results for resilience (P=0.001) and psychological hardiness (P=0.01). As a result, hope therapy training has a positive effect on women with type 2 diabetes resilience and psychological hardiness (P=0.05).

Conclusion: According to a covariance analysis, hope therapy significantly increases the resilience and psychological hardiness of women with type 2 diabetes who were referred to a diabetes association in Tehran.

Keywords: Hope therapy, Resilience, Psychological hardiness, Type 2 diabetes

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* Corresponding Author:

Samaneh Hajiabbasi, Msc.

Address: Department of Psychology, Payame Noor University, Baft, Kerman.

Tel: +98 (913) 362 7338

E-mail: Samaneh.hajiabbasi@gmail.com

1. Introduction

The **World Health Organization (WHO)** estimates that diabetic patients in Iran will exceed 6 million by 2030 [1]. Diabetes is the leading cause of kidney failure and blindness. The actual cost of care in Iran is \$44 billion, the indirect cost of this illness is \$54 billion, and the cost of hospital visits is \$10 billion a year [2]. Patients' emotional and physical well-being is a meaningful problem. Diabetic symptoms, such as diet, exercise restriction, intrusive blood glucose control, regular insulin doses, chronic complications, hospitalization, and shorter life expectancy, cause most psychiatric issues in patients [3]. More than a quarter of people with diabetes have mental health concerns, but most of them go unnoticed [4]. It was also in a previous report emphasized the incidence and effect of cardiorenal disorders in the type 2 diabetes community, which showed that it linked these conditions to a high risk of subsequent mortality [5].

A noteworthy percentage of these individuals may have additional psychiatric disease complications, such as depression or anxiety. This emphasizes the importance of adequate support and the creation of resilient solutions that help a person control their diabetes while still managing stress or anxiety that can be a side effect of getting a wound. It is well understood that related psychosocial conditions such as anxiety and depression slow wound healing, and that outcomes increase when patients are actively involved in their treatment. Stress can increase the risk of patients making cognitive errors or negatively evaluating themselves psychologically [6, 7]. Identifying humans as free and valuable beings depends on psychological hardiness, one of the most prominent character traits. Even under extreme stress, humans can apply rational and logical coping strategies while protecting their body and mind if they apply logical and rational strategies [8].

Many experiments have examined hardiness's impact on human well-being and chronic illness. According to Baron's study, people with hardiness respond more successfully and constructively to the stresses and challenges that are normal in the workplace. They rarely cause those pressures to persist and contribute to physiological disease. There is substantial evidence that hardiness has a good relationship with physical and mental health [8, 9]. Domestic and international literature have identified psychological toughness, self-efficacy, self-esteem, and social reinforcement as practical factors in managing and treating patients with type 2 diabetes (T2D) [7, 8]. Ac-

ording to Karimi et al., for people with Type II diabetes and healthy people, there is a considerable association between hardiness and occupational life quality. These findings have shown that hardiness does not predict the consistency of a person's work-life if they have Type 2 diabetes [7]. Treatments that consider both psychological and physical therapies are the most effective options, both in terms of improving the condition and satisfying their needs [10]. Given the broad specialist field of T2D and its associated mental health problems, and the unclear state of research on the treatment of resilience and psychological hardiness, this study undertook hope therapy training for people with T2D to collect evidence. Hope is described as one's belief in one's ability to design desirable pathways to achieve one's objectives and persuade others to follow those paths [11]. The authors who advocate hope-based action, defining hope as an emotional state based on a shared sense of will and plans to accomplish one's goals [12]. Hope and resilience were shown to have significant direct impacts on psychological and subjective well-being in studies. In contrast, protective behaviors had little effect on these two variables except resilience [13, 14].

Moreover, individuals with elevated endurance levels are more likely to have a balanced disposition, positive emotionality, enthusiasm, and an openness to new opportunities [15]. Proactive actions and habits also follow positive emotions. Individuals with high resilience can deal with confusion, conflict, and failure [16]. In this context, both hope [16, 17] and stability [18, 19] as protective factors in helping prevent psychological disorders developing will play essential roles in counteracting the adverse effects of type 2 diabetes. The purpose of this study is to determine if hope therapy is effective in improving resilience and psychological hardiness of women with type 2 diabetes at the Diabetes Association of Tehran. There are no previous studies similar to this article. Therefore, due to the small sample size, a pilot study was considered. This might include reducing the burden on participants, improving instructions, or identifying potential ethical issues.

2. Materials and Methods

This research was an experimental study with a quasi-experimental design and a pre-test-post-test with a control group. The statistical population of the present study included all women with type 2 diabetes in 6, 3, and 15 districts of Tehran. As a result of the purposive sampling method, 30 people were selected for the sample. Following a random assignment (tossing), 15 people were assigned to the experimental group and 15 to the control

Table 1. Content and treatment sessions

Sessions	Hope therapy Training [11]	Assignments and Homework
1	Introduction; Execution of hardiness and resilience questionnaire; In this meeting, first the goals of the group meetings were explained to the members and the schedule, how to participate and the benefits of participating in the meetings were explained. Then, hardiness and resilience questionnaires were presented to both experimental and control groups in the form of a pre-test.	Thinking about what you want to achieve in life and writing down a list of these goals in the order of what is most important to you.
2	In this session is about organizing hope and what hope is and the importance of being hopeful in life that helps increase happiness. The characteristics of hopeful people and observing and paying attention to encouraging events in life were also explained.	Make a list of failures and their reasons.
3	In this session, what is frustration and how to become frustrated, and how to overcome frustration were taught.	Reviewing the objectives of our life. Deciding on the goals we want to achieve.
4	In this session, they were taught about the goal and how to set goals, and ways to achieve goals in life.	Determining a goal that is meaningful, measurable, and specific
5	Examining positive thinking in life and replacing it with negative thoughts: In this session, group members were taught about how to have positive thinking and how to replace it with pessimistic and negative thoughts through practice and practical skills.	Keep a record of self-talk during goal pursuit. Manage negative self-talk during goal pursuit and handling failure.
6	Sense of taste: Take time once a day to enjoy something you're usually in a rush to do (eg: Eating meat, showering, walking). When it's done, write down what you did, how you did it differently, and how it felt compared to when you normally went through it.	Rethinking how you eat and exercise. Identifying challenges and sharing the outcome.
7	In this session, communication and ways of communicating and recognizing the types of communication along with practice for better understanding were taught.	Creating a diagram of goal. Listing the abilities needed for objective goals
8	Review and evaluation of group training sessions and appreciation and thanks to group members and post-test.	Sharing personal experiences about the group



group. There were three criteria for inclusion: Women with type 2 diabetes, provided written consent, and not under intervention therapy. The study exclusion criteria included dissatisfaction with group and absences from treatment sessions over two times.

Training sessions of 1.5 hours in 11 weekly sessions were given to the experimental group as a set schedule with training chapters (Table 1). The control group was not trained, while the experimental group was. Both groups (30 people) were measured twice. Prior to the intervention, resilience scale and hardiness questionnaire were assessed using relevant questionnaires, and it performed a second measurement after the intervention using a post-test (resilience and psychological hardiness).

Connor-Davidson resilience scale (CD-RISC): Connor and Davidson have developed this scale [20]. This scale has 25 items scored on a Likert scale from zero (completely false) to four (always true). Resilience was

scored from zero to 100 on this scale, with zero being the lowest score and 100 being the highest. Mohammadi has standardized this scale in Iran [21]. Using Cronbach's α as a measure of internal consistency, he tested 248 people and achieved an internal consistency score of 89%. Preliminary studies of normal and patient samples have assessed the reliability and resilience of the Persian version of the Resilience Scale [22]. The Cronbach's α coefficient was 0.87 for the reliability of this test.

Kobasa hardiness questionnaire: There are 50 questions in this assessment; 17 questions are related to challenge, 16 questions to commitment, and 17 questions to control, each formatted on a Likert scale (4 options). The scores of 39 acts of the test were reversed and to each three subscales, it presented separate scores and the total score of the hardiness accounted for the non-weighted mean of these three subscales [23]. Hardiness constituents as control (17 Items), commitment (16 Items) and challenge (17 Items) have a reliability coefficient of 7%,

78%, 72%, respectively [24]. Items 27, 26, 25, 24, 23, 22, 5, 4, 3, 2, 1 were scored in reverse from and the rest of the questions were scored directly. The reliability of this questionnaire in the present study was calculated using Cronbach's α coefficient of 0.83.

The course was nearly 12 hours long, with 90 minutes of hope therapy training twice a week. The teaching materials were created in accordance with the scientific guidelines for supportive treatment [11]. Each meeting began with a discussion of planning and concluded with homework. Details and tasks were issued in the form of pamphlets and disks. Participants in the group conducted resilience and social hardiness surveys before the course. The participants were asked to answer questions again two weeks after the procedure ended. Before and after the procedure, the control group also completed the questionnaire without any planning.

Statistical analysis

In order to analyze the research data, the researchers used the statistical package SPSS software, version 21. Both pre-test and post-test data were described using Mean \pm SD statistical indices. The Kolmogorov-Smirnov goodness of fit test was used to test

The normal distribution of the research dependent variable and the Levene's test was used to test the homogeneity of variances. The analysis of covariance was used to compare the mean scores of the experimental and control groups, as well as the impact of pre-test and other covariates on the post-test outcome. As a result, the con-

clusions used in the ANCOVA analysis are appropriate. Analysis of covariance was also used to assess the mean scores of the testing and control classes, as well as the impact of pre-test scores and other interfering factors on the post-test.

3. Results

Thirty women with type 2 diabetes and a mean age of 47.16 ± 7.57 years participated in this study. In terms of education, the majority of them 60(%) had post-secondary education. Furthermore, marital status 80(%) of them were married and 70(%) of them were housewife. Moreover, the majority of the participants had been afflicted for 4 to 10 years (Table 2).

Results of Table 3 showed that resilience and psychological hardiness of intervention group had significantly improve following intervention ($P<0.001$), while there were no significant changes in the control group for resilience ($P=0.317$) and psychological hardiness ($P=1.00$). According to the means of the groups (Table 3), it was observed that the hope therapy had significantly and positively influenced resilience and psychological hardiness among women with type 2 diabetes. Moreover, the results adjusted for baseline covariate indicated that the groups differed significantly on resilience ($P<0.001$, $F=963.486$, $\eta^2=0.991$) and psychological hardiness ($P<0.001$, $F=136.776$, $\eta^2=0.969$) (Table 3).

Table 2. Demographic variables of participants

Variables	Mean \pm SD/No. (%)		P
	Hope Therapy	Control	
Age (y)	46.32 \pm 7.71	47.38 \pm 6.88	0.420
Education	Middle school	5(33.33)	0.940
	High school	6(40.0)	
	Academic	4(26.67)	
Marital status	Married	11(73.33)	0.654
	Single	4(26.67)	
Employment status	Employed	4(26.67)	0.721
	Housewife	11(73.33)	

Table 3. Mean±SD of resilience and psychological hardiness scores in the experimental and control groups

Variables	Group	Mean±SD		P (within-group)	F	Eta
		Baseline	Post-test			
Resilience	Experimental	39.9±4.75	85.53±3.33	P<0.001	963.486	0.991
	Control	38.2±4.55	39.93±4.55			
	P (between-group)	P=0.317	P<0.001			
Psychological hardiness	Experimental	8.13±1.302	15.86±0.83	P<0.001	136.776	0.969
	Control	8.13±1.30	8.46±1.72			
	P (between-group)	P=1.00	P<0.001			



4. Discussion

Patients were generally receptive to interventions aimed at increasing hope, as per earlier research, and in some cases, these interventions even led to improvements in their health-related actions. The aim of this research was to determine the effectiveness of hope therapy to enhance resilience and psychological hardiness among women diagnosed with type 2 diabetes.

Researchers found that hope therapy was effective in increasing psychological well-being and resilience in divorced women [25], increased hope and decreased depression in diabetic patients [26, 27], increased hope in diabetic patients after intervention compared to control [28], and improved diabetic patients' mental health [3]. Diabetes treatment necessitates nuanced, ongoing, and taxing self-care action. Given that psychosocial effect is a clear indicator of mortality and morbidity of diabetic patients, incorporating psychosocial factors into diabetes care at all stages is critical for improved medication adherence and good glycemic control.

Given the relevance of psychosocial factors in diabetes management and stress, dependable, well-evaluated psychosocial interventions/therapies are needed to help patients cope with the day-to-day demands of diabetes [3]. Azami et al suggested that higher efficacy goals, a better quality of life, and lower HbA1c levels can predict better diabetes self-management behaviors [29]. The researchers concluded that resilience is related to HbA1c, and that the use of effective coping strategies (e.g. problem-solving, emotional expression, acceptance, and social support) is related to strong glycemic regulation (HbA1c <7.5%) [29, 31]. In a literature review, Torabizadeh et al. suggest that resilience preparedness may be boosted in diabetes patients; though these resilience trainings do

not have a clear effect on glycemic management, they can lead to better self-care practices [32].

According to Snyder's research, chronic patients who receive hope therapy have a more appropriate reaction when faced with disease-related pressures and stresses, avoid medication more, and consider and pursue the proposed treatment more after receiving hope therapy intervention [31]. These findings suggest that resilience programming should be included in interventions for this group, with subjects like optimal sleep, physical exercise, adequate dietary preferences, blood glucose screening, drug enforcement, self-efficacy, and social reinforcement covered.

The positive link between toughness and endurance was established in previous research, and it was argued that employing adequate therapy to develop resilience and hardiness in diabetes would result in a reduction in psychological issues and an enhancement in quality of life [11]. On the other side, another study has indicated that the tougher a person is, the less threatening challenging events are to them, and the more successful coping techniques they employ. People who lack the capacity to manage their emotions have little drive to stay cool when faced with ordinary stress, and they are unable to conquer their difficulties fast due to their inadequate efforts and composure. The use of tools and strategies for coping with emotions may therefore be more effective than not doing so in the presence of unpleasant emotions, because a person may not be able to control them in some circumstances [7].

Hope counseling, which is founded on the motivational thinking approach, emphasizes an individual's strengths rather than their flaws. The positive aspect of hope enables people to cope with their illness and the challenges

it poses, reduce their emotional pain, and improve their quality of life and mental health. The therapy can also help patients cope with the crisis of the disease from a physiological and emotional standpoint. It may also help patients cope with the disease's crisis on a clinical and emotional level. Furthermore, optimism is an effective way to improve the quality of life of chronic patients. As a result of their increased optimism, this community of patients' self-care, quality of life, and overall health improve [7, 8, 28]. Further feasibility studies will investigate how the intervention affects tolerance and psychological hardiness.

5. Conclusion

According to a covariance analysis, hope therapy significantly increased the resilience and psychological hardiness of women with type 2 diabetes who were referred to a diabetes association in Tehran. The findings of the post-test revealed that this group of patients' hope had greatly improved.

Ethical Considerations

Compliance with ethical guidelines

The study was approved by Islamic Azad University, Central Tehran Branch, Iran (Code: IR.IAU.IAUT.REC.1399.041).

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Authors' contributions

Conceptualization and Supervision: Negar Pilban Samaneh Hajiabbasi, and Javad Seyed Jafari; Methodology: Fatemeh Sadat Fatemi Shahrabak; Investigation, writing original draft, review & editing: All authors; Data collection: Samaneh Hajiabbasi, Mahdi Mahbod, Fatemeh Sadat Fatemi Shahrabak; Data analysis: Samaneh Hajiabbasi; Funding acquisition and Resources: Negar Pilban, Asieh Gharedaghi, Samaneh Hajiabbasi, and Javad Seyed jafari.

Conflict of interest

The authors declared no conflict of interest.

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