Original Article

Effect of Hope Therapy on the Mood Status of Patients with Diabetes

Abstract

Background: Diabetes mellitus (DM) is a chronic disease which imposes high costs on patients and society and results in complications in patients. One of these complications includes issues related to mood. Thus, the present study was conducted with the aim to determine the effect of hope therapy on the mood status of patients with DM. **Materials and Methods:** This quasi-experimental study was performed with two groups in three stages in the summer of 2015 on 38 individuals. The study population consisted of all individuals with DM who referred to and had a medical record at Shahid Asghar Shabani Clinic (Isfahan, Iran) affiliated with the social security organization. From among the 350 individuals with medical records at the clinic, 38 who had the inclusion criteria were selected through simple random sampling. Participants were randomly assigned to control (n = 19) and experimental (n = 19) groups. The Zung Self-Rating Depression Scale was completed by both groups before, after, and 1 month after the intervention. **Results:** There was a significant difference in the mean scores of depression in the intervention group before (F = 19.48, p = 0.001), immediately after (t = 3.30, p = 0.002), and 1 month after the intervention (t = 3.09, p = 0.004), whereas there was no significant difference in the mean scores of depression before, immediately after, and 1 month after the intervention in the control group. **Conclusions:** The obtained results showed that hope therapy can reduce depression in patients with DM.

Keywords: *Diabetics, group therapy, hope therapy, Iran, mood status*

Firouz KhalediSardashti[1], Zahra Ghazavi[2], Farshad Keshani[3], Mojtaba Smaeilzadeh[4]

[1]Department of Nursing, School of Nursing, Shahrekord University of Medical Sciences, Shahrekord, Iran, [2]Nursing and Midwifery Care Research Center, Faculty of Nursing and Midwifery, Isfahan University of Medical Sciences, Isfahan, Iran, [3]Student of Artificial Intelligent, Isfahan University, Isfahan, Iran, [4]Department of Nursing and Midwifery, Gharazi Hospital, Isfahan, Iran

Introduction

Chronic diseases impose high costs on patients and their families. Diabetes mellitus (DM) is a common chronic disease and a metabolic disorder which has attracted the attention of physicians and psychologists.[1] Based on the World Health Organization (WHO) report, 4–5% of the healthcare budget is spent on DM-related diseases, and the medical costs of individuals with DM are 2–5 times higher than that of healthy individuals.[2] On the contrary, most chronic diseases, such as DM, hypertension, and renal diseases, have a negative impact on mental health and quality of life (QOL).[3] In addition, there is correlation between these diseases and physical and mental health, and QOL. Thus, the prevention and treatment of mental complications of these diseases is of grave importance.[4] Chronic diseases are painful events in individuals' lives. Due to the advancement of medical treatments, individuals with chronic diseases now have a linger life expectancy; however, they have to face with adaptability issue more than before. Although the main challenge of health and treatment in the 20th century was survival, its primary challenge in the present century is public health, QOL, happiness, and positivity thinking.[5] DM, due to its chronic nature and long-term complications which reduce individuals' adaptability, causes mood disorders. Studies have reported the higher prevalence of mental, social, and disabling issues such as fatigue, irritability, anger, depression, and anxiety in patients with DM compared to other individuals within the society. Moreover, they have shown that the prevalence of depression among patients with DM type 2 is three times higher than individuals with DM type 1. Because the majority of these patients are aware of the short-term and long-term complications of their disease, depression, frustration, and denial in these patients are not implausible.[6]

The mental health of individuals with DM is a great concern.[7] Emotional issues, such as mood swings, depression, and anxiety, in patients with DM are accompanied with reduced QOL, disruption in self-care behavior, and reduced glycemic control, which can disrupt diabetes management.[8] Furthermore, individuals

Address for correspondence:
Ms. Zahra Ghazavi, Nursing and Midwifery Care Research Center, Faculty of Nursing and Midwifery, Isfahan University of Medical Sciences, Isfahan, Iran.
E-mail: Zahra_ghazavi@nm.mui.ac.ir

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with chronic diseases have different physiological, psychological, social, and emotional needs compared to healthy individuals. Finding methods to satisfy these needs is part of the process of coping with the disease. While the physical needs of the patients are satisfied, their emotional and social needs may be overlooked. Therefore, the most beneficial choice, both in terms of disease treatment and satisfying the patient's needs, is interventions that not only consider physical treatment but also psychological and social therapy. One of these effective and important interventions is hope therapy.[9]

Based on the efficacy of hope therapy in physical disorders, Snyder has recommended the use of hope by medical specialists for the treatment and promotion of mental health in patients with physical and mental disorders.[10] In Islam, hope and hopefulness are important factors; God has invited mankind to hopefulness and optimism regarding the system of life and has portrayed a bright future for humanity. He considers despair and disappointment as obscene and wicked and the second greatest sin because it results in the lack of hope in the grace and mercy of God and lack of belief in God's power and infinite beneficence.[11]

Benson Ward, in reviewing studies on hope, has stated that high level of hope has a positive relationship with physical and psychological wellbeing, high self-value, positive thinking, and exceptional social connections.[12] Today, with the emergence of positive psychology, it has been found that the reduction of negative symptoms results in mental health and effective performance.[13] Hope therapy, based on the positive psychology approach, focuses on the capabilities of individuals instead of only focusing on their weaknesses.[14]

Despite the importance of complementary therapies, such as group hope therapy, regarding motivation and behavioral changes, it has received little attention in health-related fields and there are limited studies in this regard.[15] The greatest volume of research on hope therapy in the recent decades belongs to Seligman, the father of the science of positive psychology, and Snyder.[16] The results of the study by Snyder show that individuals with chronic diseases better cope with the pressures and stresses resulting from treatment, accept treatment better, and have higher compliance to treatment subsequent to hope interventions[17] The hope therapy program used in the present study was a combination of Snyder's hope therapy and the hope plan in Islam. Very few studies have been conducted on the impact of hope therapy on the mood status of individuals with DM and the researcher found no studies in this regard in the reviewing of library resource. Thus, the present study was conducted with the aim to determine the effect of group hope therapy on the mood status of individuals with DM.

Materials and Methods

This quasi-experimental study was performed with two groups (experimental and control) in three stages in the summer of 2015 on 38 individuals with DM. The study population consisted of all individuals with DM who referred to and had a medical record at Shahid Asghar Shabani Clinic (Isfahan, Iran) affiliated with the social security organization.

The study inclusion criteria consisted of the willingness to participate in the study, having DM, and being 30–50 years of age, a resident of Isfahan, able to articulate experience and memories, and a Muslim. The exclusion criteria consisted of participation in other mental therapy programs during the study, psychotropic medication use, severe hopelessness, and the loss of a first-degree relative.

Sampling selection method was convenient. From among the 350 individuals with medical records at the clinic, 38 who had the inclusion criteria were selected through simple random sampling. After obtaining informed written consent forms from the participants, they were randomly assigned to control (n = 19) and experimental (n = 19) groups. The confidence coefficient of Z1 was 0.95, i.e., 1.96; power factor of Z2 was 0.80, i.e., 0.84; and s was the minimum estimation of standard deviation for each variable and d was the minimum mean difference for each of the variables between the two groups.

The data collection tool was a two-part questionnaire. The first part was a demographic characteristics form consisting of items on age, gender, marital status, education level, diabetes duration, type of complications caused by diabetes, and tablet or insulin intake. The second part was the Zung Self-Rating Depression Scale which consists of 20 items on different aspects of mood and scored based on a four-part Likert scale ranging from 1 to 4. The scoring increased from right to left for positive feelings and from left to right for negative feelings. The scoring criteria were never or seldom, sometimes, often, and always. Based on the Zung Self-Rating Depression Scale, the participants were categorized into four groups of normal mood status without mental disorder (score <50), minimum to mild depressive mood status (score = 50–59), average depressive mood status to evident depression (score = 60–69), and severe depression (score >70). It must be noted that the assessment of depression is performed as a basis for the evaluation and determination of individuals' mood status. The Zung Self-Rating Depression Scale is global standardized tool which was designed by William Zung based on a practical definition in 1965. Numerous studies in the USA and other countries have approved its validity and reliability.[18] After the completion of the questionnaires, individuals who were found to have severe depression were eliminated from the study. Then, the questionnaires were distributed among the subjects for completion.

The participants were randomly divided into control and experimental groups. For this purpose, cards with the words experimental or control were placed in a box and each participant was asked to randomly select a card.

Subsequently, a certain fixed time was determined for referral and participation in the study.

In mental therapy, a group comprised 7–12 members; thus, the experimental group was divided into two groups of 9 and 10 individuals. Each group separately took part in therapy sessions twice a week and on different days. The intervention consisted of eight 2-hour group sessions. The group sessions were held in the education class of the clinic and the subjects took part in the sessions according to previous planning.

The content of the sessions consisted of a combination of Snyder's hope therapy and the hope plan in Islam (encouraged hadiths and Quranic verses, and Quranic stories such as the stories of Prophet Joseph and Prophet Jonah). Hope therapy is a narrative approach based on the life story of individuals. In addition, the life story of each individual is based on that individuals' culture, and individuals retell their life story based on their culture. As the present study was conducted in Iran, and Iran is an Islamic country and the life of Iranians is intertwined with Islam, a combination of Snyder's hope therapy and the hope plan in Islam was used in the present study as the treatment program. This program was used for the first time by Sotodeh-Asl *et al.* in patients with hypertension in 2010 and has been localized by a number of professors and specialists based on the Iranian-Islamic culture.[19]

After the explanation of the hope program in Islam and Snyder's hope therapy program by the researcher, each subject retold her/his life story in this framework. In this study, each session consisted of four segments. In the first 25 min, the previous activities and homework of the subjects were discussed and the participants were encouraged to help each other in solving issues related to homework. This segment also included measures such as recording of emotional states, expression of strengths and abilities, gaining of experiences from other group members, practicing of hope methods and skills, preparation of a list of goals and their prioritization, and the selection of a goal for practicing in the group. Then, the subjects were trained on skills related to hope for 30 min. In this segment, the subjects learned a new skill related to hope each session; skills such as hope induction, hope creation, finding hope, and hope consolidation. In the third segment, the ways to use these skills in daily life were discussed for about 50 min. Moreover, the participants were encouraged to state issues objectively and clearly and help each other to solve these issues using hope skills. In the final 15 min of the sessions, the homework for the next session was presented.

The selected subjects were entered into the study after receiving sufficient information on the study method and goals. These sessions were performed by psychiatric nursing researchers. Immediately after and 1 month after the intervention, the Zung Self-Rating Depression Scale was again completed by the subjects in both groups. For the control group, two sessions, in the form of normal conversation, on hope therapy were held after the study. The collected data were analyzed using descriptive and inferential statistics, including independent *t*-test, Chi-square, repeated measures analysis of variance (ANOVA), Mann–Whitney U test, and Fisher's exact test, in Statistical Package for the Social Sciences software (version 19, SPSS Inc., Chicago, IL, USA).

Ethical considerations

To observe ethical principles, an approval and introduction letter was obtained from the Research Deputy of the School of Nursing and Midwifery of Isfahan University of Medical Sciences (Isfahan) and presented to the related authorities. Moreover, written informed consent forms were obtained from the subjects and they were assured of the confidentiality of their information and statements, their freedom to participate in the treatment sessions and leave the sessions if unwilling to continue, their freedom of speech, and the sessions being free of charge.

Results

The results obtained showed that no significant differences existed between the two groups in terms of the demographic characteristics of age, number of children, diabetes duration, gender, marital status, occupational status, type of complications caused by diabetes, the medication used for diabetes control, and education level ($p > 0.050$).

The results of independent *t*-test showed no significant difference between the two groups in terms of mean depression score before the intervention ($p = 0.900$). However, after the intervention ($p = 0.002$) and 1 month after the intervention ($p = 0.004$), the mean depression score of the control group was significantly higher than the experimental group [Table 1]. Furthermore, the results of repeated measures ANOVA showed that the mean depression score in the control group did not differ significantly before, after, and 1 month after the intervention ($p = 0.510$). Nevertheless, significant differences were observed in mean depression score in the experimental group before, after, and 1 month after (follow-up) the intervention ($p = 0.001$). Because no intervention based on hope therapy was implemented in the control group, no significant difference was observed in the mean depression score of this group after and 1 month after the intervention compared to before the intervention. However, in the experimental group, which received the hope therapy intervention, the mean depression score had reduced significantly after the intervention compared to before the intervention and this reduction persisted until 1 month after the intervention. Thus, it can be concluded that the hope therapy intervention was effective on the reduction of depression and increasing of mood in individuals with DM [Table 2]. In addition, the result of Fisher's least significant difference showed significant differences in depression score in

Table 1: Comparison of the mean scores of depression between the experimental and control groups

	Mean (SD)		Independent *t*-test	*p*
	Control	Experimental		
Before the intervention	48.80 (9.70)	48.20 (11.00)	0.12	0.900
After the intervention	49.40 (8.80)	40.00 (8.40)	3.30	0.002
One month after the intervention	49.30 (6.90)	41.60 (8.20)	3.09	0.004

SD: Standard deviation

Table 2: Comparison of the mean scores of depression between three time periods of intervention in the two groups

Group	Repeated measures ANOVA (mean [SD])			*F*	*p*
	Before the intervention	After the intervention	One month after the intervention		
Experimental	49.20 (11)	40.00 (8.40)	41.60 (8.20)	19.48	0.001
Control	48.80 (9.70)	49.40 (8.80)	49.30 (6.90)	0.69	0.510

SD: Standard deviation; ANOVA: Analysis of variance

the experimental group between before and after the intervention ($p = 0.001$), and before and 1 month after the intervention ($p = 0.001$). However, no significant difference was observed in this score between after and 1 month after the intervention ($p = 0.090$) in the experimental group, which shows that the effect of hope therapy persisted until the 1 month follow-up after the intervention.

Discussion

Based on the results of the present study, hope therapy is effective on the reduction of depression and increasing of mood in individuals with DM. In the positive psychology approach, hope, like placebo, has biological effects and can have a positive impact on the pain, suffering, and physical weaknesses of patients. Hope and expectation cause the activation of brain circuits and the release of endorphins and enkephalin, and thus, reduce pain in the body. With physical weakness, frustration and despair are intensified in individuals, and thus, less endorphin and enkephalin, and more cholecystokinin are released in the body. Hope, through changes in the biological state of the body, creates a pleasant feeling. This pleasant feeling further decreases affliction and pain.[20] On the contrary, the prevalence of depression, hopelessness, and helplessness in patients with DM is higher than the general public, and in different studies it has been reported as twice as that in the general public.[21] Increased duration of diseases in individuals with DM causes the emergence of complications and reduction of mood. Hope is a strong coping mechanism in patients with chronic diseases such as DM and hopeful individuals can better cope with disease crisis.[22] This is in agreement with the results of the present study. The study by Shekarabi *et al.* showed that group hope therapy significantly increased hope in mothers of children with cancer and reduced hopelessness and depression in these mothers. Moreover, they found no significant difference in hope among these mothers in the results of follow-up compared to after the intervention, although this study had a 2-month follow-up.[23] The results of the study by Bijary *et al.* showed that group therapy based on the hope therapy approach significantly increased hope and reduced depression among women with cancer compared to the control group.[24] Moreover, since hopelessness is the main component of depression, this program also elevated their mood and happiness. The present study used a combination of Snyder's hope therapy and the hope plan in Islam and was in accordance with the abovementioned studies. Sotodeh-Asl *et al*. used a program very similar to that of the present study on patients with hypertension. The content of the program used in the study by Ebadi *et al*. only emphasized Quranic verses, and they did not use Snyder's hope therapy;[25] they also found an increase in hope among women with cancer.[26] All the mentioned studies reported that hope therapy can decrease depression. Numerous studies have been conducted on the positive effect of hope therapy; however, few studies have been performed in this regard on patients with DM, none of which have assessed the impact of hope therapy on depression and mood in these patients. In the present study, there were no significant differences between the two groups in terms of age, gender, diabetes duration, marital status, occupational status, medications used for diabetes control, and education level. All subjects were married, and depression score reduced significantly in the experimental group after the intervention.

Based on the results of the current study, the factors explained below could explain the effect and persistence of the effect of hope therapy on reduction of depression and improvement of mood status in individuals with DM. The encouragement of the participants to retell their life study is one of the major principles of hope therapy. The stories provided the therapist with the opportunity to focus on hopeful prospects, especially those forgotten due to other memories and thoughts.[27] The determination of real and measurable goals and the breaking down of large goals into smaller and more achievable steps was one of the most important characteristics of hopeful individuals.[28] The participants of the present study began

this stage with the selection of small and logical goals in order to reach them within a month. Through focusing on inspiring thought methods, hope therapy helps individuals better use problem-solving skills, and as a result, to use problem-solving skills more than avoidance coping in response to problems and challenges.[29] Hope therapy utilizes positive psychology instead of focusing on weaknesses. Positive self-talk, positive thinking, a healthy diet, exercise, and connection to supportive networks are some of the characteristics of hopeful individuals that were concentrated in the present study.[30] Considering the results of the present study, it can be stated that group hope therapy can improve the mood status of individuals with DM and its effect can persist during the follow-up period. A limitation of the present study was the voluntary participation in the treatment sessions. Therefore, some of the effects observed in the present study may have been due to the participants' enthusiasm to take part in such a program; thus, in order to control this factor, other sampling methods can be used in future studies. Moreover, the participants were individuals who referred to the health center for the continuation of treatment and other patients who did not refer for treatment were not studied. In addition, the data collection tool was one questionnaire and the use of only one tool may not be able to reflect the mental experience of the subjects.

Conclusion

The present study results showed that the use of hope therapy program assisted the reduction of depression and improvement of mood status. Positive psychology can not only create positive resources but can also impact negative symptoms and be the cause of their reoccurrence. The results showed the accompaniment of hope and self-reliance with suitable expectations which is one of the most important predictive factors for treatability. Hence, the use of this approach and other approaches of psychotherapy, positive psychology, and the hope plan in Islam which are intertwined with and focus on the intrinsic needs of humans, such as hope, and have benefits, such as being easy to teach and low cost, must be considered in patients with chronic diseases, especially those with DM. The mentioned studies have emphasized the improvement of mood status and reduction of depression through hope and hope therapy. Hence, the present study results place greater emphasis on the necessity of the joining of different branches of science, including medicine and psychology, and the collaboration of psychologists and medical specialists, including nurses, to increase the efficacy of hope therapy interventions in the improvement of mood status and reduction of depression. The use of this method in individuals with DM is recommended in order to improve their mental health.

The results of the present study and previous studies illustrate that we must not solely rely on medical treatments and that patients must be assisted in the improvement of QOL and different aspects of performance, and as a result, the treatment of their disease through the establishment of counseling and psychotherapy centers and use of psychological interventions in hospitals. It is suggested that future studies include longer treatment courses and longer and multiple follow-up sessions. These follow-up sessions, in addition to illustrating the persistence of the effects of treatment, can help researchers in finding the hidden effects which manifest sometimes after the treatment.

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Conflicts of interest

Nothing to declare.

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