

RESEARCH ARTICLE

Investigating guided imagery on depression in patients with Type 2 diabetes

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ABSTRACT


Background: Diabetes is one of the major health problems and one of the most prevalent metabolic chronic diseases and its resulting complications are one of the main mortality factors in the world. Prevalence of depression in this disease is 3 times than other chronic diseases. Thus, its diagnosis and treatment is crucial. **Aims and Objectives:** The current study was conducted aiming at investigating guided imagery on depression in patients with Type 2 diabetes. **Materials and Methods:** This clinical trial study was conducted on 76 patients referring to diabetes center of Sabzevar city in 2015. Participants completed Beck depression test, and in case of gaining score 14–28 (mild and moderate depression), final approval of depression was done by the clinical psychologist. Then, following completion of the consent form, the patients were divided into guided imagery group ($n = 36$) and control group ($n = 40$) randomly. Imagery was done twice weekly for 20–30 min under supervision of the researcher within 6 weeks, and Beck depression test was again completed at the end of 6th week. Data were analyzed using descriptive statistics and one-way variance analysis in SPSS (Version 16) Software, and P as 0.05 was considered as significance level. **Result:** Mean depression scale after intervention in guided imagery group reached to 12.41 ± 2.84 from 19.05 ± 4.26 , and it reached to 19.99 ± 3.61 from 20.60 ± 4.21 in control group. Independent t -test showed no significant statistical difference between two groups in terms of depression score before intervention ($P = 0.117$), while there was significant statistical difference between two groups in terms of depression score after intervention ($P < 0.001$). Pairwise statistical t -test showed significant statistical difference in terms of depression score before and after intervention in guided imagery ($P < 0.001$). While there was no significant difference statistically in control group ($P = 0.204$). **Conclusion:** According to results of the present study, guided imagery is an effective approach to reduce depression in patients with Type 2 diabetes.

KEY WORDS: Guided Imagery; Depression; Type 2 Diabetes

INTRODUCTION

Diabetes is one of the most prevalent chronic metabolic diseases and one of the leading causes of morbidity, mortality,

and economic costs worldwide.^[1] More than 220 million people worldwide suffer from diabetes.^[2] According to the latest figures in Iran, one out of every 20 Iranians suffers from diabetes and is expected that one out of every seven Iranians has diabetes 18 years later.^[3] The World Health Organization reports show that the mortality rate from diabetes will double in 2005–2030.^[4] In addition to tangible costs in the disease, pain, anxiety, and depression are the factors that can reduce the quality of life of patients.^[5] Depression is one of the most common psychiatric disorders in diabetic patients.^[6] Depression in diabetic patients is 3 times more common than other chronic diseases.^[7] Prevalence of depression in diabetic

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patients is 61.3%.^[8] Prevalence of depression in patients with Type 2 diabetes is 8.5–14%.^[9] The study by Zahiroddin and Sadighi showed that 78% of diabetic patients suffered from depression according to Beck depression test.^[10] Depression in people with diabetes may be due to dietary adjustment, limited social life, frequent blood tests, insulin infusion, lack of consciousness, and other complications of weakness in controlling diabetes.^[11] This complication causes reduced energy and interest, feeling guilty, difficulty in concentrating, anorexia, thoughts of death and suicide, insomnia, sleep deprivation, and functional impairment.^[12] In response to concerns about the side effects of antidepressants, attention has been focused on psychotherapy interventions.^[13] Considering the time consuming and high cost of these treatments, simpler methods, such as complementary medicine, should be considered in the treatment of depression. Anxiety and depression are the most common problems that are treated by complementary medicine.^[14,15] Complementary medicine is used as an intervention in most nursing diagnoses.^[16,17] Relaxation is one of the behavior therapy methods that can be applied for the treatment of depression.^[18] Relaxation techniques include induction of a sense of tranquility, guided imagery, hypnosis, massage, progressive muscle relaxation, and yoga.^[14] Guided imagery as a mind-body technique is one of the top 10 techniques used in complementary medicine in adults.^[17] An imagery session usually starts with spontaneity. People take a few deep breaths and then abandon their bodies and minds, and then begin to visualize pleasant images that can improve them.^[18] This intervention has many advantages such as efficacy, reduced costs, and simplicity. Thus, the nurses can use it for relaxing the patient and reaching to stable state. In this method, people are encouraged to practice deep abdominal and diaphragm breathing, muscle relaxation, imagine sceneries such as jungle, seaside, and pilgrimage, and focus on the surrounding sounds and smells. Studies have shown that focus on the imagery and positive visualization can help relaxation and mood balance. In guided imagery, positive mental visualization and positive mood experiences may neutralize the depression helix. When depression individuals have access to positive mental visualization and body relaxation, they can direct and guide their thoughts away from unpleasant stimuli.^[19] Yoo *et al.* in an intervention study with random case group investigated efficacy of progressive muscle relaxation training and guided imagery on symptoms of depression, anxiety, anger, and quality of life in female patients with breast cancer. Their findings showed that depression and anxiety reduced in intervention group and quality of life was improved.^[20] Kiccolt *et al.* indicated that mental imagination could be useful for nurses in controlling and reducing occupational anxiety and depression.^[21] Considering high prevalence of depression in patients with Type 2 diabetes, and uncertainty regarding effects of guided imagery on treatment of depression in diabetic patients, current research was conducted aiming at investigating effect of guided imagery on depression in patients with Type 2 diabetes.

MATERIALS AND METHODS

This random trial with two groups was conducted from October to March 2015 on 35–65-year-old patients with Type 2 diabetes, which referred to diabetes center in Sabzevar city. Sample size was calculated as 36 in each group (72) considering similar studies. Due to sample attrition by 10% in research units during the study, sample size was calculated as 80 for maximizing confidence of the presence of minimum adequate sample, and finally, 76 individuals completed the study. Inclusion criteria included Type 2 diabetes, age 35–65, lack of diagnosed depression before diabetes, lack of major stressful life events (deaths of the first degree relatives, severe disease in family members, financial bankruptcy, accident, and severe family disagreement with a spouse) during the past 6 months, absence of severe depression, or suicidal thoughts and having at least the elementary fifth degree of education. Individuals with hearing impairment in a way that they failed to hear the voice of the researcher, history of drug use due to mental disorders, including depression, taking medications that cause symptoms of depression during the past month, cardiac, respiratory, and kidney diseases, hypertension or epilepsy, and having bad memory about the sea were exclusion criteria. After obtaining approval from the college and center of diabetes, written consent was taken from the patients to participate in the research. In case of patient's consent, checklist of research unit selection and personal information form was completed by the researcher, and in case of qualification for the study inclusion, the patients completed Beck depression test. After gaining score 14–28, participants were randomly assigned in guided imagery group ($n = 36$) and control group ($n = 40$). Intervention was conducted for 6 weeks twice per week, and the time and day of patients' presence was chosen based on their agreement and consent. Sessions were held in the environment with comfortable seats and silent place. The researcher called patients the day before every session, and reminded them the time to present in the sessions. The patients were asked to attend in sessions with comfortable clothing. In case of patient's absence, the researcher called him and asked about the reason for absence in the session. In case of lack of access to the patient or his absence, he was considered as absent in the session, and it was recorded in the session list of patient. The next session was continued according to the previously informed program. Before initiation of each session, the patients were asked to remove belt, watch, glosses, and any other accessory. In all sessions, the clinical psychologist supervised the way of training techniques by the research and their practice by the patients. In the guided imagery group, first, two educational sessions were held for familiarization and mastery of patients over the technique, and then it continued for 4 weeks as twice per week with the presence of the researcher. In the first session, reasons for depression in diabetes and the ways for its control were discussed, and research objectives were explained. In addition, the researcher also explained the way and conditions of practicing the technique, so that the patient felt himself as in a calm sea beach. Following

explanation by the researcher, questions of the clients about guided imagery technique were answered, implementation of the practice was taught, and difference in physical and mental feelings of participants was expressed after imagination, and at the end of technique, practice under supervision of the researcher. In the second session, the patient again performed guided imagery technique in the presence of the researcher. Following insurance of the correct practice, other training sessions were held. Guided imagery practices by audio file were conducted by the patients twice per week for 20–30 min under supervision of the researcher. During the research, in case of disease exacerbation or suicide thoughts, the patients were referred to the psychologist. No specific intervention was done in the control group. Beck depression questionnaire was completed at the end of 6th week by the patients in control and intervention group. Data analysis was done using SPSS software, and $P < 0.005$ was considered as significance level. Pairwise *t*-test, independent *t*-test, and Chi-square test were used in this work.

RESULT

Using Chi-square, it was found that there is no statistical significant difference in two groups in terms of gender, marital status, residential place, educational level, household income, and occupation of patient. Independent *t*-test indicated that there is no significant statistical difference between two groups in terms of age, duration of disease, and depression score before intervention [Table 1]. Mean depression score in guided imagery group before intervention was 19.05 ± 4.26 , which reduced to 12.41 ± 2.84 after intervention. In control group, mean depression score was 21.4 ± 20.60 at the beginning of study, and it was changed to 61.3 ± 19.99 after end of study. At the end of 6th week after intervention initiation, result of statistical independent *t*-test in intervention group and control group showed that there is significant difference between two groups in terms of depression score ($P < 0.001$). Based on pairwise *t*-test, there is significant difference between depression score before and after study in guided imagery group ($P < 0.001$), while there is no significant difference between depression score before and after study in control group ($P = 0.204$). After intervention, 11 individuals (89.27%) showed complete improvement of depression in guided imagery group, while no case of complete depression improvement was observed in the control group. Mild depression in guided imagery group reduced to 50% from 78.52%, while it increased to 50% from 5.37% in control group. In addition, moderate depression reduced to 11.22% from 22.47% in guided imagery group, while it reached to 50% from 5.62% [Table 2].

DISCUSSION

The current study was conducted aiming at investigating guided imagery on depression in patients with Type 2

diabetes. According to research findings, guided imagery caused reduction in mild-to-moderate depression score in patients with Type 2 diabetes. Mean depression score showed significant statistical difference after intervention in guided imagery group compared to control group ($P < 0.001$). Results showed significant difference in guided imagery group in terms of mean depression score before and after intervention ($P < 0.001$). While no such significant difference was observed in control group ($P = 0.204$). In addition, findings showed that guided imagery caused improvement in 27.89% of patients with Type 2 diabetes. Mental visualization can be considered as one of the intervention methods for depression treatment. This method includes mental practices designed for mental acceptance of health penetration and improvement in the body, and using analysis for creating scenes, smells, tastes, sounds, or other senses, which provides a kind of purposeful visualization. Guided imagery technique is one of the mental visualization techniques, which contains imagination of a specific optimal image or goal, and self-visualization when this goal is achieved. Review of studies during 1966–1998 showed that guided imagery could be useful in treatment of stress, anxiety, and depression.^[22] Findings by Alifar (2013) and Abolghasemi (2011) are consistent with current findings.^[23,24] In the study by Alifar and Nokani, guided imagery technique and visualization developed significant difference in symptoms of depression and hope in dialysis patients. In the study by Abolghasami *et al.* on patients with breast cancer, it was found that there was significant difference in patients who received guided imagery training or meaning therapy (experimental group) compared to control group in terms of depression, anxiety, and hopefulness. In the study by Kordi *et al.*^[25] on depressive symptoms during the postpartum women, it was found that the group receiving relaxation with guided imagery showed reduced depression symptom severity by 58.1%. Watanabe *et al.* in their work concluded that relaxation and positive imagery after two sessions increased positive mood and reduced negative mood.^[26] As observed, these findings are consistent with the findings in the current study. In the current study, similar to most studies on the necessary number of sessions for effectiveness of guided imagery technique, 12 sessions were used for intervention group. Research results are consistent with the hypothesis in Watanabe *et al.* work, and depression score was significantly reduced in the intervention group ($P < 0.001$). The findings can be justified in the way that guided imagery can cause that individuals gain control of their mental images. This ability reduces entry of negative imaginations to the mind, and it leads to raising mood of patients and their hope for life. Guided imagery can strongly influence perception of patients about their self-concept and self-image of their efficiency by highlighting the power of mind. In addition, implementation of these techniques in group causes that patients gain more comfort when they observe others similar to them and witness shared themes among themselves. The limitations of this research include the individual differences and mental states of the research samples in response to the intervention, the

Table 1: Comparison of mean age and duration of suffering from diabetes and Beck depression score before intervention in patients with Type 2 diabetes in intervention and control groups

Group variable	Mean±SD		Independent <i>t</i> -test
	Guided imagery	Control	
Age (year)	51±1.64	53±1.41	<i>P</i> =0.08
Duration of suffering from diabetes	19.05±4.26	20.60±4.21	<i>P</i> =0.06
Beck depression score	7±78	8±72	<i>P</i> =0.09

SD: Standard deviation

Table 2: Comparison of depression levels in terms of percent at the beginning (0 week) and end (6th week) in two research groups

Depression	Guided imagery		Control	
	0 week (%)	6 th week (%)	0 week (%)	6 th week (%)
Non-depressed	0	27.89	0	0
Mild depression	52.78	50	37.5	50
Moderate depression	47.22	22.11	62.5	50
Total	100	100	100	100

impact of the patient's environmental and cultural factors on his understanding of the effect of the visualization technique on improving his level of depression.

CONCLUSION

Guided imagery caused reduction of depression score in patients with Type 2 diabetes, and it can be used as a low-risk approach, in which the patient plays active role. Implementation of this technique and investigating its impact on other symptoms in patients with Type 2 diabetes and other chronic diseases is recommended.

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