Determining the Effect of Using the Fordyce Joy Pattern on Stress Anxiety and Depression of Diabetics in the Selected Hospitals of the Faculty of Medical Sciences of Abadan

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Abstract

Background and Aims: Diabetes is one of the most common metabolic diseases with debilitating effects, with a chronic and imperceptible course, and is on the rise, and is a source of stress for people with the disease. In addition to the physical effects of diabetes, stress also has a negative psychological effect, the most important of which is depression. Therefore, the aim of this study was to investigate the effect of using Fordyce happiness pattern on stress, anxiety, and depression in diabetic patients.

Method: The present study was a two-group intervention study in two stages before and immediately after the intervention, which was performed on 50 patients with diabetes hospitalized in Abadan educational and medical hospitals in 2019. Samples were randomly selected and then randomly divided into intervention and control groups. Happiness training was given to patients in 3 sessions by the researcher and to collect data, a 21-item DASS questionnaire was used as a pre-test and post-test in both groups.

Results: The results of independent t-test showed that the mean stress, anxiety, and depression before the intervention were not significantly different between the two groups ($p > 0.05$) but in the intervention group between the two groups were statistically different ($p < 0.05$). Intragroup comparisons also showed that the mean stress, anxiety, and depression in the control group after the intervention did not have a statistically significant difference ($p < 0.05$) but in the test group after the intervention there was a statistically significant difference ($p < 0.05$).

Conclusion: The results indicate the effectiveness of Forday's happiness model on the level of anxiety, stress, and depression of diabetic patients, so it is recommended that this model be used as a suitable guide and solution in clinics and diabetes centers.

Keywords: Fordyce, Happiness Pattern, Diabetes, Depression.

Introduction

Diabetes is a dangerous and multifactorial chronic disease characterized by high blood sugar or hyperglycemia (1, 2). It is one of the most common metabolic diseases with debilitating side effects, chronic and imperceptible, and is on the rise. (3).The World Health Organization (WHO) has declared diabetes to be a latent epidemic, and since 1993 it has called on all parts of the world to take action against the epidemic. People with diabetes will reach 300 million by 2025 (3, 5). Because diabetes has very strong behavioral and emotional factors, daily control of diabetes is not easy for patients and more often leads to psychological pressures and severely affects the patient's quality of life (1). Diabetes is a source of stress for people with the disease. In addition to its physical effects, diabetes also has a negative psychological effect. The most common of these effects is depression. Hearing loss, lack of motivation, sleep disorders, sexual dysfunction, apathy, and feelings of inadequacy are among the most important symptoms of depression (6, 7). Anxiety, stress, and stress in human life can cause many problems and negative effects on health and well-being (8). Today, despite technological advances, disorders such as depression, anxiety, and stress are common diseases of the century. Depression and anxiety are the most common psychiatric disorders with a prevalence rate of 10 to 20 percent per year in the general population (9). And in Iran, in order to determine the status of depression, anxiety, and stress, followed by the preparation of an appropriate training program for them, little research has been done (10). Complications of diabetes include neuropathy, retinopathy, and nephropathy, as well as other levels of coronary stroke and peripheral vascular disease, which can adversely affect the quality of life in the long run and lead to many physical and mental problems such as depression, anxiety, disability, sedentary lifestyle and obesity (3, 11 and 12). Therefore, not paying attention to the psychological reactions of these patients aggravates their disease (15). Countless interventions have been made to address the psychological consequences of psychologically positive effects in these patients, including a focus on increasing patients' sense of happiness (16). Happiness is a type of non-pharmacological treatment and intervention used to deal with these consequences. It is also known as an inner feeling of natural origin that results in external consequences (17). Some researchers believe that happiness is the first condition for health development (18, 19).In fact, happiness is a kind of evaluation of one's self and one's life and includes concepts such as feeling satisfied with life, having positive emotions, and not having depression and anxiety (20). Happiness, regardless of how it is created, can improve physical health. The more time a person spends on their positive emotions, the less time they spend on negative emotions (21).Because of the benefits of living happily, many researchers have tried to create approaches to increase happiness in people's lives (22).

One way to do this is to teach Fordyce's happiness program. Fordyce is one of the experts in happiness psychology who has done a lot of research and presented a collection called the pattern of happiness increase (a combination of cognitive and behavioral theories) (23). The results of a Fordyce study show that all of the strategies used have improved the happiness of the people being trained. Fordyce happiness pattern has 14 components, eight of which are cognitive and the other six are behavioral.

Cognitive components include: lowering expectations and aspirations, creating positive and optimistic thinking, planning things, focusing on the present, reducing negative emotions, stopping unhappiness, cultivating a healthy personality, and valuing happiness. The components of the Fordyce model are: increasing activity, increasing social communication, strengthening close relationships, cultivating social personality, creativity, and engaging in meaningful and self-contained tasks (23, 24). Lama argues that

learning to be happy is the first step we must take to achieve happiness (25). In a study, Khayri et al. Showed that the happiness pattern of Fordis is effective in reducing depression, stress, fatigue, and, to some extent, anxiety in patients with multiple sclerosis (28). Given the high prevalence of diabetes and its socioeconomic burden, as well as the need to prevent and treat the disease and its association with psychological symptoms such as stress, anxiety, and depression, the researchers decided to conduct a study aimed at influencing the pattern. Fordyce should be happy about the stress, anxiety, and depression of diabetic patients in Abadan city.

Materials and Methods: The present study was a two-group intervention study in the two stages before and immediately after the intervention. The population of this study is patients with diabetes hospitalized in educational and medical hospitals of Abadan city in 2019. The sample size was calculated using the following formula and based on similar studies, about 50 people.

$$n_i = \frac{2(z_{1-\alpha/2} + z_\beta)^2 s^2}{d^2}$$

The sample is randomly selected and then randomly divided into intervention and control groups. Patients whose last file number is hospitalized are in the intervention group and patients whose last file number is even are in the control group. Criteria for entering the study include definitive diagnosis of diabetes by an endocrinologist, age between 30 and 65, full awareness of the patient and the ability to communicate, no history of mental illness based on the documents in the patient's file, an average score to High in one of the subscales of stress, anxiety and depression based on the dass_21 instrument scale, no hemodynamic disturbances and no cognitive problems. Criteria for leaving the study include non-cooperation or death of the patient, changes in the level of consciousness, the incidence of disease complications. The study is conducted in all three shifts in the morning, evening, and night.

The tools used in this study were a personal demographic information questionnaire (including age, gender, marital status, level of education, and economic status) and a 21-item DASS questionnaire.

The 21-question DASS questionnaire is an abbreviated form of the 42-question questionnaire. The questionnaire includes three subscales of anxiety, depression, and stress. This scale was first validated by Leib and in 1995 on non-clinical samples (15) and in the same year by Brown on clinical samples (16). Leiband's reliability of this scale was reported to be 0.91, 0.81, and 0.89, respectively, based on Cronbach's alpha coefficient for the three subscales of depression, anxiety, and stress. In 2007, Samani and Jokar reported that the reliability and reliability of this scale for the three subscales of depression, anxiety, and stress were 0.83, 0.75, and 0.87, respectively (17).

Questionnaires are first completed by both groups before the intervention. The procedure is that the researcher performs an educational program for the intervention group based on the Fordyce educational model in the form of 3 two-hour sessions and three days a week for 1 week in the specialized clinic of the relevant hospitals.

Speech, group discussion, questions, and answers are administered by a nurse who has already completed the training course. At the end of the third session, the questionnaire is completed for both groups. In addition to the training sessions, the researcher provided Fordyce with an intervention booklet in the form of a pamphlet.

Statistical analysis of the collected data was performed using SPSS software version 22 and descriptive and analytical statistical tests. The significance level of the above tests was considered to be less than 0.05.

Results: In this study, 50 patients with diabetes were divided into two groups: test and control (25 people each). A comparison of the demographic characteristics in Table 1 shows that the two groups did not have a statistically significant difference (p> 0.05).

P-Value	Intervention Group N=25	Control Group N=25	Variable Group	
	Frequency (percentage)	Frequency (percentage)		
0/47	(28)7	(32)8	Under **40**	Age
	(44)11	(40)10	**40-49**	
	(28)7	(28)7	More than **50**	
0/51	(60)15	(%64)16	Female	Gender
	(40)10	(%36)9	Male	
0/23	(12)3	(16)4	Illiterate	Education
	(32)8	(28)7	High school	
	(44)11	(48)12	Diploma	
	(12)3	(8)2	Bachelor's degree and Higher	
0/74	(56)14	(60)15	Married	Marital status
	(44)11	(40)10	Single	
0/62	(28)7	(20)5	Employee	Employment status
	(56)14	(93/5)15	Housewife	
	(12)4	(20)5	Retired	
0/89	(96)24	(%92)23	Urban	Address
	(4)1	(8)2	Rural	
0/15	(16)4	(20)5	Low	Income
	(76)19	(72)18	Medium	
	(8)2	(8)2	High	
0/38	(32)8	(36)9	Yes	Hospital History
	(68)17	(64)16	**No**	

Table1. Comparison and distribution of relative frequency and percentage of units studied based on demographic characteristics in two groups of test and control.

The results of the independent t-test showed that the mean stress, anxiety, and depression before the intervention were not significantly different between the two groups (p> 0.05). Also, the mean stress, anxiety, and depression differences between the two groups after the intervention (p <0.05).

Intragroup comparisons showed that the mean stress, anxiety, and depression in the control group after the intervention were not statistically significant (p> 0.05). Intragroup comparisons showed that the mean stress, anxiety, and depression in the experimental group after the intervention were significantly statistically significant (p <0.05). (Table 2)

P –Value Inter Group	Intervention Group (n=25)	Control Group(n=25)	Stress
	Standard deviation±Standard Deviation	Standard deviation±Standard deviation	
0/06	1/14±8/52	1/15±8/57	Before
<0/0001	1/01±7/68	1/54±9/41	After
	0/003	0/24	P –value Inter Group
		Anxiety	
0/74	1/94± 6/5	1/93± 6/4	Before
<0/0001	1/48± 6/0	1/98± 7/2	After
	0/33	0/47	P –value Inter Group
		Depression	
0/58	1/68±6/56	1/72±6/52	Before
<0/0001	1/22±6/03	1/74±6/78	After
	0/01	0/12	P –value Inter Group

Table2. Comparison of a mean stress, anxiety and depression areas of the studied samples in the control and test group before and after the intervention.

Discussion: This study was conducted to determine the effect of using the Fordyce happiness model on stress, anxiety, and depression of diabetic patients under observation in selected hospitals of Abadan University of Medical Sciences.

Based on a review of past studies, Fordyce' happiness model is a way to reduce stress, anxiety, and depression, but no study has measured the effect of this method on reducing stress, anxiety, and depression in diabetic patients, so the researchers decided to Do the study with the stated goal.

The results of this study show that there is no significant difference between the mean of stress, anxiety, and depression before the intervention in the two groups of intervention and control. However, a significant difference was observed in the intervention group as opposed to the control group by comparing intragroup after intervention, mean stress, anxiety, and depression in the intervention group.

In this regard, Khayari et al. Conducted a study in 2016 with the aim of influencing the happiness pattern of Fordyce on depression, stress, anxiety, and fatigue of patients with multiple sclerosis. The results of this study showed that the happiness pattern of Fordyce is effective in reducing depression, stress, fatigue, and anxiety (30).

Also, in 2015, Mehrabi et al. Conducted a study to determine the effect of Fordyce happiness program on stress, anxiety, and depression of hemodialysis patients. The results of the study showed that the Fordyce Happiness Exercise Program can reduce stress, anxiety, and depression in patients treated with hemodialysis (31).

Hemmati et al. Also started a study in 2015 with the aim of determining the effect of Fordyce happiness program on the stress of mothers of children with cleft lip and palate. The results of the study showed that the Fordyce Happiness Exercise Program can be effective in reducing the stress of children's joints with cleft lip and palate (32).

In 2014, Qazavi et al. Conducted a study to determine the effect of a happiness training program on depression, stress, and anxiety in nursing patients with cancer. The results of this study showed that the educational planning of happiness reduces depression, anxiety, and stress in nurses in cancer patients' wards (33), which is consistent with the results of the present study.

Therefore, it can be said that happiness, regardless of how it occurs, can improve physical health. The more time a person spends on their positive emotions, the less time they spend on negative emotions (21).And because of the benefits of living happily, many researchers have tried to create approaches to increase happiness in people's lives (22), so it seems that this pattern can play an effective role in reducing emotions. Negative in diabetic patients such as depression, stress, and anxiety.

Since the present study has a time limit and the duration and number of training sessions can directly affect the effectiveness of the researcher's work, it is recommended that other researchers devote more time to intervention and training. In addition, it is suggested that another step be taken to track and evaluate participant's delays, in order to examine the long-term impact of Fordyce happiness model training on these patients. Also, due to the fact that in selecting the research sample, certain input criteria were considered, it is recommended to be careful in generalizing the results to people outside this range.

Conclusion: The results showed that the Fordyce model is effective on depression, stress, and anxiety in diabetic patients, so it is recommended that this model be used as a suitable guide and solution in clinics and diabetes centers.

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