

Effect of Fordyce's Happiness Program on Stress, Anxiety, and Depression among the Patients Undergoing Hemodialysis

Abstract

Background: Patients with end-stage renal disease on hemodialysis are affected by psychological stressors, which contribute to poor quality of life and negative clinical outcomes. Stress, anxiety, and depression are highly prevalent in this population. Fordyce's happiness program has been believed to be one of the complementary therapies that could promote psychological wellbeing. The goal of this study was to evaluate the effects of Fordyce's happiness program on the stress, anxiety, and depression in patients with hemodialysis. **Materials and Methods:** This is a clinical trial. A total of 50 patients undergoing hemodialysis were randomly recruited into the study group ($n = 25$) and the control group ($n = 25$). Intervention of Fordyce's happiness program was administrated for 20 minutes during hemodialysis sessions once a week for 6 sessions. For the control group, 3 sessions were held by the researcher's colleague through communication, dialogue, and listening to the patients' problems individually. The data was collected by the Stress, Anxiety and Depression (DASS-21) questionnaire. **Results:** There was a significant difference in the mean scores of stress, anxiety, and depression in the intervention group before immediately after and one month after intervention ($P < 0.05$), whereas there was no significant difference in the mean scores of stress, anxiety, and depression before, immediately after, and 1 month after intervention in control group. **Conclusions:** The obtained results showed that Fordyce Happiness Training Program can reduce the stress, anxiety, and depression in patients treated with hemodialysis.

Keywords: Anxiety, depression, Fordyce's happiness program, hemodialysis patients, Iran

Introduction

Patients undergoing hemodialysis at times feel that they are between life and death. Occupational, nutritional, and financial problems, concerns about marriage and sexual issues, and the fear of death and readmission are the major problems which cause depression, despair, and feeling of guilt in these patients.^[1] Hemodialysis is considered a long-term treatment and has significant side effects on the physical and mental wellbeing.^[2] Psychological disorders are the most common problems in patients undergoing dialysis. The most common psychological disorders among these patients are depression and anxiety, which are the risk factors indirectly influencing the development of the phenomenon of suicide and directly in reducing the quality of life (QOL) of patients undergoing hemodialysis.^[3] The prevalence of depression among patients with end-stage renal failure has been reported to be 19–60%. Moreover, evidence indicated

that 12–52% of patients treated with hemodialysis have some level of anxiety.^[4] Stress is also a known factor affecting the QOL of patients undergoing hemodialysis.^[5] It is also recognized as an important factor in the reduction of the QOL of patients undergoing hemodialysis. Unfortunately, despite the high prevalence of psychological disorders, these disorders often remain undiagnosed and untreated.^[6] There are many findings on the high prevalence of depression, for which no treatment has been considered. More than 70% of patients who suffer from depression and anxiety are not aware of their symptoms and have no information on appropriate treatment for these symptoms (depression, anxiety, and stress).^[7] Moreover, in Iran, on average, 63.9% of patients treated with hemodialysis suffer from anxiety, 60.5% suffer from depression, and 51.7% suffer from stress.^[8] Most patients treated with hemodialysis are deprived of common screening facilities for determining mental health problems. Untreated mental disorders increase the

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rate of mortality, decrease QOL, and increase the risk of suicide.^[7] To prevent these complications, mental disorders should, first, be diagnosed, and then, immediate action should be taken to treat the psychological symptoms.

To treat the psychological symptoms, both pharmacological and nonpharmacological treatment methods must be used. Nonpharmacological treatments include social support network and cognitive behavioral therapy (CBT).^[2] One of the common methods to treat psychological disorders is the use of chemical drugs, which results in drug toxicity in patients undergoing hemodialysis due to the inability of these patients to excrete these drugs and the non-dialyzability of these drugs.^[9,10] Therefore, nonpharmacological measures, such as CBT, are of significant importance. A CBT method which has received much attention from therapists is Fordyce's Happiness Training Program.^[11] Fordyce's Happiness Training Program has been recognized as a valuable factor in achieving a level of positive thinking in regards to life events and adapting to one's surroundings and occurrences.^[11] Farzadfar *et al.* found that Fordyce's Happiness Training Program effectively reduced the symptoms of depression and increased the level of happiness.^[12] The study by Nasirlu *et al.* showed that Fordyce Happiness Training Program in addition to increasing the mental health of patients with diabetes and cancer, also leads to increased QOL.^[13] Because of the increasing rate of patients undergoing hemodialysis followed by increased psychological problems,^[14] as well as the role of nurses, particularly psychiatric nurses, in maintaining and improving the mental health of these patients, this study aimed to determine the effect of Fordyce's Happiness Training Program on stress, anxiety, and depression among these patients.

Materials and Methods

This clinical trial was conducted among two groups (control and experimental) in three stages of before, immediately after, and 1 month after the intervention (randomized clinical trial, which has been registered with the code of IRCT2015062914463N5 in the Clinical Trial Registration Center of Iran, and approved by the Research Deputy of Isfahan University of Medical Sciences). Study started on June 3, 2015 and finished on December 7, 2015. The study participants included 50 patients with chronic renal failure who had undergone hemodialysis and were referred to the hemodialysis wards of Amin and Zahra Marzieh hospitals in Isfahan, Iran for treatment. They were selected through random sampling from the study population. They were placed into two groups of control and experimental (25 individuals in each group). A demographic characteristics questionnaire and the Depression, Anxiety, and Stress Scale (DASS-21) were completed before beginning the intervention by patients in both groups. Then, the participants were assigned to two experimental

and control groups. This study included patients who were 20 to 75 years of age, literate, and undergoing dialysis 3 times a week, had a fixed and active record in the hemodialysis center, and at least 3 months had passed since the beginning of their dialysis.

In this study, the data collection tool was a two-part questionnaire. The first part of the questionnaire consisted 8 questions on demographic characteristics (age, gender, marital status, education level, occupation, number of children, duration of hemodialysis, and cause of kidney failure). The second part was the DASS-21, a 21-item standard questionnaire that assesses depression, anxiety, and stress. DASS-21 was designed in 1995 by Lavibound. Each of the subscales of psychological symptoms of depression, anxiety, and stress contained 7 questions. Scoring was based on a 4-point Likert scale ranging from 0 (never) to 3 (always) based on a standardized questionnaire (DASS-42). In a previous study, the reliability of this questionnaire using Cronbach's alpha was reported to be 0.93.^[9,15] In the study by Masahebi *et al.*, which was conducted with the aim of the validation of DASS-21 for the Iranian population, 1070 men and women responded to the questionnaire.^[16] The reliability of this scale was investigated through internal consistency, validity using statistical analysis, and criterion validity was determined by concurrently using the Beck Depression Inventory (BDI), Zung Self-Rating Anxiety Scale (SAS), and Perceived Stress Scale (PSS). Overall, the reliability and validity coefficients obtained were very satisfactory and significant ($P = 0.001$). The correlation between the subscale of depression of the DASS-21 and BDI was 0.70, subscale of anxiety of DASS-21 and SAS was 0.67, and subscale of stress of DASS-21 and PSS was 0.49. Based on their results, the DASS-21 was suitable for use in clinical and psychological research.^[16]

In order to adhere to the ethical principles, the researcher referred to the studied medical centers after obtaining a referral letter from the Research Deputy of Isfahan University of Medical Sciences, Iran. After presenting the introduction letter and explaining the purpose of the study to the authorities of the centers, their approval was obtained. The participants were also informed of the process of study by the researcher, and written informed consent forms were obtained from them. All patients were assured of the confidentiality of their personal information and that they could withdraw from the study whenever they wished to. After random allocation of the participants to the groups and conducting the pre-test, the Fordyce Happiness Training Program was implemented in the experimental group. This program was conducted in 6 sessions lasting 20 minutes (1 session per week), and the content of these sessions were derived from the studies by Fordyce. This program had two cognitive and behavioral dimensions. The cognitive dimension consisted of group discussions and

Table 1: Description of sessions Fordyce Happiness Training Program had 14 principles (6 behavioral principles and 8 cognitive principles)

Sessions	Summary
First	Understanding the patients with researcher. Completed the (DASS-21) questionnaire, definition of happiness – necessity and its importance, a brief review of its history and methodology of happiness-related researches, the results of research, research performed about happiness, and also correct and incorrect imagination about happiness
Second	Training the subjects to spend more time in communities and collective activities, being productive, and performing useful and meaningful works
Third	Training the principles of planning and better organization, removing anxieties, and lowering wishes and expectations
Fourth	Training the principles of positive and optimistic thinking, living in the present time, and upbringing a healthy character
Fifth	Training the principles related to social and extrinsic personality, being one's real self, putting negative thoughts and feelings aside, and training the principles of hearty relationships as the main source of happiness and valuating happiness
Sixth	Completed the (DASS-21) questionnaire and determined post-test for after 1 month

the behavioral dimension consisted of measures taken by individuals to achieve happiness. The Fordyce Happiness Training Program had 14 principles (6 behavioral principles and 8 cognitive principles) [Table 1].^[11] After the intervention, patients completed the DASS-21 again. For the control group, 3 sessions were held by the researcher's colleague through communication, dialogue, and listening to the patients' problems individually. Then, the DASS-21 was completed by the control group. After 1 month of intervention, the questionnaire was again completed in both groups. The information collected were analyzed using descriptive and inferential statistical tests in the Statistical Package for the Social Sciences software (version 19, SPSS Inc., Chicago, IL, USA).

Ethical considerations

Participants signed an informed consent and were given written information and were ensured that their participation would be voluntary. Moreover, they were ensured about the confidentiality of their information.

Results

In this study, from among the 124 participants who met the inclusion criteria, 56 were selected after completing a consent form, and then, 28 patients were randomly placed in the experimental and control groups. In the control group, 2 patients due to lack of cooperation and 1 due to being absent from the sessions were excluded

from the study; in the experimental group, 3 patients due to lack of cooperation were excluded from the study. Thus, the experimental and control groups consisted of 25 participants.

The results of Chi-square, Fisher's exact test, and Mann-Whitney tests showed significant differences in demographic variables (age, gender, marital status, education level, occupation, number of children, duration of hemodialysis, and cause of kidney failure) in the two groups. The independent *t*-test showed no significant difference between the control and experimental groups before the intervention in terms of the mean score of stress, anxiety, and depression. In the experimental group, repeated-measures analysis of variance illustrated that the mean scores of stress, anxiety, and depression differed significantly before, immediately after, and 1 month after the intervention ($P < 0.05$). However, in the control group, the mean scores of stress, anxiety, and depression had no significant differences before, immediately after, and 1 month after the intervention [Table 2].

Discussion

This study aimed to determine the effect of the Fordyce Happiness Training Program on the stress, anxiety, and depression among patients undergoing hemodialysis. The results showed that the mean scores of stress, anxiety, and depression in the intervention group had significant differences before, immediately after, and 1 month after the intervention. The mean score of stress, anxiety, and depression in the experimental group immediately after and 1 month after the intervention was significantly lower than before the intervention. However, the mean score of stress, anxiety, and depression had no significant differences immediately after and 1 month after the intervention. Farzadfar *et al.* showed that the Fordyce Happiness Training Program was effective in reducing depression in women without caretakers, and that it effectively reduced depressive symptoms and increased levels of happiness.^[12] This study was similar to the present study in terms of having two experimental and control groups, with the difference that, in the present study, sessions of communication, discussion, and listening to problems were provided for the control group during the week. However, according to the results of these sessions, it is expected that strategies be designed to considerably reduce their problems regarding depression, anxiety, and stress. The study by Nasirlou also showed that the Fordyce Happiness Training Program in the experimental group, compared to the control group, significantly increased QOL and mental health (reducing depression, anxiety, and stress) of patients suffering from cancer and diabetes.^[13] The results of the present study were consistent with the abovementioned studies. The researcher did not find any available studies which contradicted the results of this study. These findings were very promising and suggested

Table 2: Comparison of mean scores of stress, anxiety, and depression in trial groups and control groups before, immediately after, and 1 month after intervention

Variable	Before the intervention		Immediately after the intervention		One month after the intervention		Analysis of variance test			
	Mean (SD)		Mean (SD)		Mean (SD)		Trial group		Control group	
	Trial group	Control group	Trial group	Control group	Trial group	Control group	P	F	P	F
Stress	10.8 (5.1)	10.4 (5.5)	6.2 (2.6)	10.6 (4.9)	5.5 (2.9)	10.5 (4.8)	<0.001	15.31	0.69	0.37
Anxiety	7.9 (4.6)	7.8 (4.7)	4.4 (2.04)	7.6 (4.6)	3.6 (2.2)	7.7 (4.5)	<0.001	11.32	0.29	1.29
Depression	9.2 (4.4)	9.04 (5.2)	4.7 (3.1)	9.7 (4.3)	3.8 (3.1)	9.1 (4.7)	<0.001	16.98	0.34	1.10

that the Fordyce Happiness Training Program was able to reduce the symptoms of stress, anxiety, and depression. Rabiee *et al.* showed that the Fordyce Happiness Training Program significantly reduced the rate of depression in pregnant women in the intervention group compared to the control group.^[17] They also found that, 1 month after the intervention, there was a reduction in the rate of depression in the experimental group.^[17] This study was also similar to the present study in terms of having 2 groups and 3 stages, but differed in that no intervention was performed in the control group in the study by Rabiee *et al.* The results also showed that the mean scores of stress, anxiety, and depression in the control group before, immediately after, and 1 month after the intervention had no significant differences. These results were not unexpected due to the lack of effective intervention on stress, anxiety, and depression in the control group. Kamyab *et al.* found that the Fordyce Happiness Training Program significantly increased the happiness of patients suffering from diabetes in the experimental group compared to the control group.^[14] In the study by Shirdel *et al.*, the Fordyce Happiness Training Program lead to improved mental health dimensions among patients taking methadone.^[18] The present study was similar to the mentioned study in terms of the number of groups and sessions, and their findings were also consistent. However, in the study by Kamyab *et al.*, no intervention was conducted for the control group, and the number of sessions and the duration of the sessions of the Fordyce Happiness Training Program were more than the present study. Moreover, Kashani Nasab *et al.* reported that the Fordyce Happiness Training Program lead to the reduction of depression in older women.^[19]

Inability to completely control the possible confounding factors, such as the individual characteristics of patients that may have a role in the process of the Fordyce Happiness Training Program, was the potential limitation of this study.

Conclusion

Based on the findings of this study, the Fordyce Happiness Training Program can reduce the stress, anxiety, and depression in patients undergoing treatment with hemodialysis. These findings, along with the results of other studies, imply that forecasting and providing such psychological services in the mental health service delivery system for patients undergoing hemodialysis is absolutely

necessary and effective. The findings of this study can be used as a basis for further research and help to develop methods to improve the quality of care.

Inability to completely control the possible confounding factors, such as the individual characteristics of patients that may have a role in the process of the Fordyce Happiness Training Program, was the potential limitation of this study.

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Conflicts of interest

There are no conflicts of interest.

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