

RESEARCH ARTICLE

THE EFFECTIVENESS OF FORDYCE HAPPINESS MODEL TRAINING ON LIFE EXPECTANCY IN CANDIDATE PATIENTS FOR CORONARY ARTERY BYPASS SURGERY

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Abstract

Objective: The purpose of this randomized control trial study was to understand the effects of happiness training by Fordyce method on life expectancy in patient's candidates for heart surgery. This study was conducted on 66 patients who were candidates for heart surgery referred to Heshmat Heart Hospital in Rasht. Patients were randomly divided into two groups of intervention (n=34) and control (n=32) *via* blocked randomized method. The instrument included a standard Miller questionnaire. The intervention method of Fordyce Happiness Model was implemented *via* face-to-face sessions within 7 days before surgery every day for 20 to 30 minutes. Data analysis was conducted, based on the results obtained before the intervention, there was no significant difference between the two groups in terms of mean life expectancy score (p=0.643). Life expectancy score after the intervention in the case group was significantly higher than the control group (p=0.032). The findings of this study indicate that Fordyce happiness training can effect on life expectancy in patients undergoing heart surgery. *ASEAN Journal of Psychiatry, Vol. 22 (3): May 2021: 1-10.*

Keywords: Fordyce Happiness Program, Life Expectancy, Coronary Artery Bypass

Introduction

Cardiovascular Diseases (CVD) are currently the most common cause of death in the world and it has become more prevalent in recent years. About 17 percent of the world's mortality is related to heart disease [1]. Currently, Coronary Artery Disease (CAD) is the leading cause of death in people over 35 years in Iran. According to the World Health Organization reports, CAD was 46% of the major leading causes of death in our country in [2]. Coronary Artery Bypass Grafting (CABG) is one of the most common cures for patients with coronary artery disease. CABG is responsible for 35-50000 death in Iran annually [3].

CABG is a type of treatment that improves heart function, symptoms relief and patients' quality of

life promotion and survival rate [4]. Despite the recent advances in coronary angioplasty still CABG is the most common cures for better perfusion to heart muscle in the last decade [5]. However, it is a kind of health threat. However, diseases treatment gives another opportunity for health, it may be a major source of stress [6]. Patients who are candidates for heart surgery are prone to anxiety. Given that surgery is a threat for a person, he or she may become hopeless and lose the effort to return health [7,8].

Hopefulness has direct relationship with adjustment performances like the psychological coping, physical health and the skill of problem solving and make the life better [9]. Life expectancy is one of the most important indicators

of health and the result of various economic, social, environmental, cultural and other factors. Health indicators such as life expectancy have a significant impact on important variables including economic development and human capital. The results show that urbanization rates, illiteracy and per capita tobacco spending have a negative effect in the long term and versus per capita income and per capita social welfare expenditures have a positive effect on life expectancy [10].

Hope, like a placebo, has biological effects and can have a positive effect on controlling the pain and disability of physical patients, and in return, hopelessness causes physical and mental illness. Patients who do not have a life expectancy and they are reluctant to surgery and undergo surgery insistently by their relatives are more likely to have complications during and after surgery [11]. The results in a study in 2015 about hope with recovery after heart surgery showed that there was a significant positive relationship between hope and recovery after heart surgery in heart patients. On the other hand, it can point to the moderating role of hope in the amount of stress and anxiety before surgery. People who have higher levels of hope in the face of preoperative stress and anxiety will undoubtedly have a positive impact on their postoperative recovery process [12].

Happiness is a positive emotion in psychology and can be defined as a pleasant and lasting feeling. Because of the benefits that a happy life has for people, many researchers have tried to develop approaches to increase happiness in life [13]. In addition to cognitive components, this program also had behavioral and social components. Happiness refers to a positive emotion that gives life hope [14]. Fordyce as one of the experts on the psychology of happiness in 1997 has presented a program called "Happiness Training" consists of 14 elements after reviewing various researches.

Outlines of the Fordyce program includes 1- increasing activity 2- increasing social relationships 3- increasing creativity 4- planning and organizing 5- get away from concern 6- Reduce expectations 7- Increase positive thinking and optimism 8- Live in the moment 9- developing healthy personality 10- promoting a social and extroverted personality 11- being real 12-

Eliminate negative emotions 13- Strengthen close and sincere relationships and finally 14- Prioritize happiness [15].

Previous studies investigated about effect of Fordyce Happiness Model (FHM) on depression, stress, anxiety, and fatigue in patients with multiple sclerosis [16], FHM in mothers of children with a cleft Lip and palate [17], FHM on occupational engagement Behvarzan [18], FHM and its effect on increasing the happiness of controlled and self-esteemed families [19,20], FHM on quality of life and ability to withstand disturbances in women with physical-motor disabilities and at least FHM on coping strategies, quality of life, the persistence and optimism of female students. Hence, there were few studies on the effect of FHM on life expectancy [21, 22]. Therefore, regarding to the high prevalence and progressive the number of cardiac diseases and surgeries following it and also its direct relations with psychological indicators specially life expectancy that may cause to incidence and heart diseases development, hence, we aimed to evaluate the effectiveness of Fordyce Happiness Model Training on life expectancy in candidate patients for coronary artery bypass surgery [23].

The research was perform to access promising results for a way to control and reduce weakness and inadequacy in this field, promoting the psychological dimension of the disease, enhanced positive emotions affecting mental health and at the end better quality of life associated with improving the health of patients after cardiac surgery.

Methods

This study has been approved by the ethics committee of Guilan University of Medical Sciences with the code of IR.GUMS.REC.1398.227. It also has the registration code number IRCT20180205038626N6 in Iran Clinical Trial Registration Center. A double-blind randomized clinical trial study, 68 patients who were candidates for open heart surgery referred to Heshmat Cardiac Training Center in Rasht were admitted to the study by observing the inclusion and exclusion criteria. Inclusion criteria were: the

ages ranged from 20 to 65, having a minimum literacy, undergoing heart surgery for the first

time, being able to discuss in training sessions, being aware of the time and place. Exclusion criteria were included patient dissatisfaction with continuing to study, mental retardation, having studied psychology and related fields, history of participating in happiness model training course, having depressive and anxiety disorders based on patient history and file, new crisis history such as first-degree relatives death, divorce of yourself or parents in the last 6 months, having hearing and vision impairment.

At first, a written informed consent form was taken from the patients and the implementation method and interventions were explained to the participants. Then the eligible individuals were randomly divided into 2 groups during the random allocation of patients: The first group was trained by Fordyce happiness model (n=34) and the second group was trained without intervention (n=34). Based on the random block method and considering the six blocks, 11 blocks were produced for 68 people. In the group without intervention, 2 people canceled their participation in the meetings and the number reached. After generating the list, each person was assigned a unique code.

Instrument

Two forms of demographic information questionnaire (age, sex, status, marital status, occupation, previous hospitalization history) and the other questionnaire of Miller standard questionnaire were used to collect information. Miller Questionnaire: The Miller Hope Questionnaire was developed in 1988 by Miller and Powers. This questionnaire is a diagnostic test that was first used to measure the hope of cardiac patients in the United States to show their level of hope. This test includes 48 aspects of states of hope and helplessness in which the items listed have been selected based on overt or covert behavioral demonstrations in hopeful or frustrated

individuals [24]. For each aspect that represents a behavioral cue, the options are 1) strongly opposed, 2) dissenting, 3) indifferent, 4) agreeing, and 5) strongly agreeing. Each person scores from 1 to 5 points by choosing an option that applies to him/her. The sum of the points obtained indicates the person's hope. 0 The range of points varies from 48 to 240. If a person scores 48 points, he/she is considered completely helpless and a score of 240 indicates the maximum hope [24]. In the present study, to determine the reliability of the questionnaire, two methods of Cronbach's alpha and ballad were used, whose coefficients were 0.90 and 0.89, respectively [25].

For group homogenization, all patients who were candidates for cardiac surgery after performing angiographic diagnostic procedure and were more similar in terms of inclusion criteria and in terms of psychological characteristics and underlying disease history and demographic characteristics were included in one group. Group sessions include 4 to 6 people (each ward has 6 beds) to intervene, taking into account the drop-out and out of the study, which includes patients admitted to the inpatient wards of men and women who after angiography are admitted to the open heart surgery ward [26].

With the coordination of the head nurse and the supervisor, all CABG candidate patients were kept in one room.

Intervention

Sessions were held daily for 20 to 30 minutes from 7 days before heart surgery through a psychologist. During the seven sessions of Fordyce happiness training, with the exception of the first session, the issue was raised and discussed in a group. Assignments were given to the individuals, and at the end, after summarizing and concluding, the assignment that each member should do within a week was given to them in the form of a booklet. The general structure of the training sessions [27] is listed in (Table 1).

Table 1: General structure of Fordyce happiness model training sessions

Sessions	The purpose of each session	Session description
First	Introduction and introduction to the description of objectives	At the beginning of the first session, while greeting each member, they were asked to introduce themselves and choose a leader from among themselves. After that, the goals to be achieved at the end of the last session were stated and the group members were advised to try to get out of the recession and become active and lively at the beginning, which is the first step of happiness in the Fordyce style.
Second	Teaching collective activities and being productive	In this meeting, after greeting, he reminded some of the previous meeting and asked the members to state the actions that were required for the first principle which is to be entertained and active. Then, talk to them about how to spend their time in social activities. Also, the method of doing useful and meaningful work and the so-called productivity were taught and suggestions were given to them and the opinions of the group were heard and at the end, the meeting ended with assigning to each member.
Third	Better planning and organization, avoiding worries, lowering expectations	After greeting and welcoming the members of the group, they were asked about the reminder of the second session, their questions and speeches and also their performance was discussed, as well as their productivity and actions for group and group activities. Then, they were taught how to plan better to enjoy a more lively life and get rid of any stress and worries through relaxation and stress relief. To live a happy life, lower their expectations and aspirations and be able to experience the best and happiest life with the least facilities. Finally, it ended with giving homework for the next meeting and encouraging them to live happily.
Fourth	Teach how to think positively and optimistically as well as live in the present	The session began with a greeting, and members were asked about the techniques they taught in the previous session to better plan their lives and relieve stress and anxiety, as well as lower expectations and aspirations and the assignments provided. necessary trainings were given in the case of teach the skill of positive thinking and optimism about different aspects of life and to help members live in the present and not be stressed by the future and that the most important time is when we live, not the past. The session ended with assignment and feedback.
Fifth	Teaching the development of a healthy, social and extroverted personality	At the beginning of this session, as in previous sessions, greetings and greetings were passed. Then, the tasks were reviewed and the ninth and tenth principles of Fordyce including the development of a healthy personality and the development of social and extroverted personality were discussed. People were taught how to be social, healthy and sociable and to relate to others. The meeting ended with a summary and determination of the task and positive feedback.

Sixth	Teach yourself to be real and put aside negative problems and feelings	According to the routine of the previous sessions, this session also started and continued by considering the homework of the group members and solving problems and questions. Then, the principle of being real means what you are, accept your strengths and weaknesses and with your abilities for the best. The members of the group were also provided with the necessary training to put aside problems and negative emotions. The members of the group were also provided with the necessary training to put aside negative problems and feelings; That putting aside and rejecting negative feelings means having a good and positive outlook on life. This is an important step to succeed and live happily in everyday life. At the end, the meeting ended with assignment and receiving feedback.
Seventh	Teaching sincere communication is the most important source of happiness and prioritizing joys and practicing the skills learned in the previous sessions.	These sessions began with greetings and greetings as in the previous sessions, and after visiting the homework, other skills such as intimate communication and prioritizing happiness and effective life relationship were taught. In this meeting, group members were asked to present the techniques and solutions they had learned during the previous sessions and to have a group discussion. Troubleshooting was done and a summary of the training was provided so that anyone who has a question can be answered. Finally, by introducing some reputable Fordyce Happiness training sources to the group members, they were asked to write down and submit suggestions and meeting restrictions. After collecting the forms, the post-test session was scheduled with the consent of the group members, and finally, the individuals were thanked for their active and continuous presence in the sessions.

To control disturbing factors such as noise in the intervention section in the patient's room without the presence of a researcher. The Miller questionnaire was completed for both groups after the seventh session.

The collected data were entered into SPSS statistical software version [28] and analyzed using descriptive and inferential statistics. In order to check the normality of the data using Kolmogorov-Smirnov test and to evaluate the homogeneity of variances using Levene's test. By establishing the assumptions, quantitative data analysis was performed using independent t-test, paired t-test and qualitative data were analyzed using chi-square test. If the hypotheses were not confirmed, Mann-Whitney and Wilcoxon tests were used for quantitative data and Fisher's exact test was used for qualitative data. It should be added that a significance level of less than 0.05 was considered significant.

Results

In patients candidates for open heart surgery in the intervention group, the highest percentage (55.9) were men and in the control group, the highest percentage (53.1) were women. The majority of the subjects in terms of education, 66.7% of the intervention group had diploma and 75% of the control group had university education. Also, 55.2% of the intervention group and 44.8% of the control group were married. The results of statistical analysis showed that none of the quantitative variables (age, number of children and length of illness of participants) and qualitative (gender, marital status, education, occupation, place and lifestyle, history of hospitalization) were no significantly different between the two groups which indicates similarity between two groups ($p > 0.05$) (Table 2).

Table 2: Baseline characteristics of propensity-matched population according each groups

Variable groups	Experimental group(n=34)	Control group (n=32)	P-value
Male(gender)**	19(55.9)	15(44.1)	0.464
Age,years ^a	55.12±6.1	56.21±6.4	0.486
Marital status (Married)	32(55.2)	26(44.8)	0.253
Occupation*			
worker	5(55.6)	4(44.4)	0.356
Employee	3(50)	3(50)	
self-employment	13(54.2)	11(45.8)	
housewife	13(65.5)	10(43.5)	
retired	0(0)	4(100)	
Location**			
City	23(54.8)	19(45.2)	0.485
village	11(45.8)	13(54.2)	
life style*			
Alone	1(100)	0(0)	0.64
with wife	15(57.7)	11(42.3)	
With wife and child	16(47.1)	18(52.9)	
With child	2(40)	3(60)	
Education			
High school	16(47.1)	18(52.9)	0.121
Diploma	16(66.7)	8(33.3)	
Bachelor	2(25)	6(75)	
Previous conditions			
Duration of illness(Day) ^b	55.39±80.50	33.17±30.99	0.846
Number of children ^b	3.33±1.85	3.89±1.68	
Hospitalization history*			
1-2 times	16(43.2)	21(56.8)	0.365
3-4 times	13(61.9)	8(38.1)	
5 times and more	5(62.5)	3(37.5)	
Values are n (%) or mean±SD. For categorical variables,* Fisher's Exact test,** Chi-square, ^a Independent t-teast, ^b Mann-Whitney U was used. P<0.05 was considered statistically significant.			

Figure 1 show the mean life expectancy scores of patients who were candidates for open heart surgery in the two groups before and after the intervention. According to the results obtained

before the intervention, there was no significant difference between the two groups in terms of mean life expectancy score (p=0.643).

CONSORT 2010 Flow Diagram

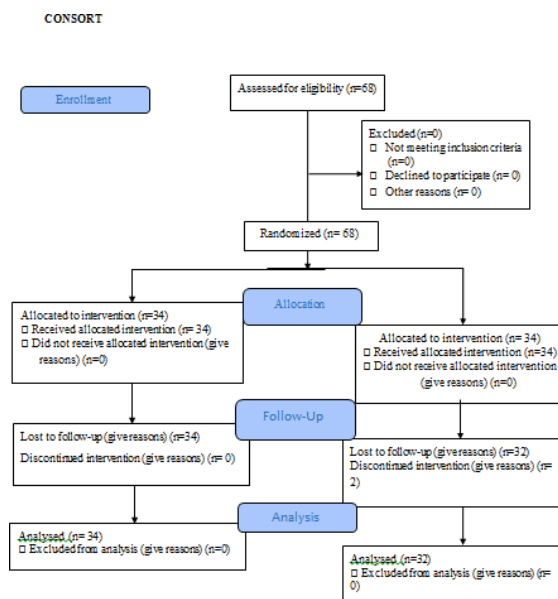


Figure 1: Consort Flowchart

However, after the intervention, a significant difference was observed between the two groups ($p=0.032$). Life expectancy score after intervention in the intervention group was significantly higher

than the control group. Also, the mean life expectancy scores before and after the intervention in both groups were significantly increased (Figure 2).

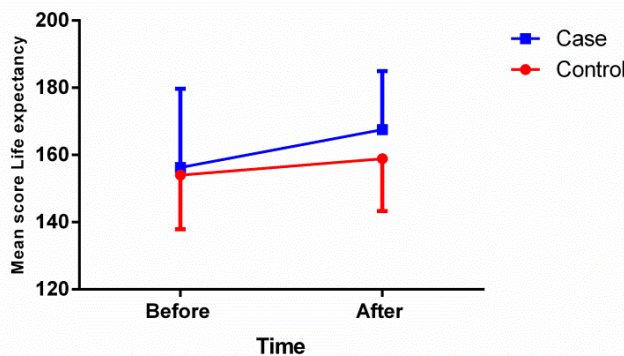


Figure 2: Comparison of the mean life expectancy scores of patients candidates for open heart surgery in the two groups before and after the intervention

Discussion

In this study, The Effectiveness of Fordyce Happiness Model Training on Life Expectancy in Candidate Patients for Coronary Artery Bypass Surgery was investigated. This intervention was based on clarifying the mental framework and

behavior of patients who were candidates for cardiac surgery to reduce the life expectancy caused by CABG. This study indicated that the Fordyce happiness training program increased patients' life expectancy. There were no statistically significant difference between the

experimental and control groups in terms of mean life expectancy scores before the intervention. The findings presented that seven days of happiness training session, there was a statistically significant difference between the two groups in terms of mean life expectancy scores. Hence, the researcher's intervention had a positive effect on life expectancy.

However, there were no research has been conducted on Fordyce happiness education on life expectancy in patients undergoing CABG. In fact, previous research has examined the effect of Fordyce Happiness training on other variables in patients or has been investigated the effect of Fordyce happiness training on life expectancy in different target groups. Therefore, the results of this study are consistent with studies that have studied the effect of education on learned helplessness. Although, the findings of this study are indirectly in line with the findings of studies that have evaluated the effectiveness of education on the dependent variable. In this regard, Hariri and his colleagues investigated that the participants in the experimental group had more life expectancy compared to the control group.

Also showed in their study that happiness training using Fordyce method can affect the life expectancy of divorced couples. And in another study conducted by. In 2017, it was shown that group semantic therapy training sessions can affect the life expectancy of the elderly living in boarding schools and promote the social health of this group. According to the researcher, positivity and the ability to deal with situations that may always be endangered under the heading of problems, the spirit of happiness and life expectancy. Positive or hopeful people are healthier and happier and have a stronger immune system. Therefore, the results of this study showed that complementary therapies including Fordyce educational interventions can be effective on the life expectancy of patients who were candidates for cardiac surgery.

The results of the study have highlighted the importance of holding Fordyce happiness educational interventions on life expectancy of patients who were candidates for CABG. By creating conditions of life expectancy in the community and educating it to individuals (parents, educators, managers, managers of organizations and doctors and nurses) and to any

individual in the community in general, it can not only prevent people from developing cardiovascular disease, but also in the event of disease and surgery, lead to faster recovery and improve the health of patients.

Conclusion

One of the limitations of the research is the mental state of the research units during the interview, which can affect their response. Therefore, the researcher tried to maintain the calm of the environment, but its complete control was outside the capabilities of the researcher. Another limitation was the lack of a follow-up period. Another limitation that can be mentioned is the specificity of the research sample to open heart candidate patients, which makes it difficult to generalize the results to other groups and members of other communities. As in this study the effect of Fordyce happiness training on life expectancy in patients who were candidates for cardiac surgery has been done, it is suggested that the effect of this method be compared with other complementary methods to determine a more effective method on life expectancy of these patients.

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