

TREATING HEART PATIENTS BY ENHANCING POSITIVE EMOTIONS THROUGH POSITIVE PSYCHOLOGY INTERVENTION

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Date Received: Jan 23,2018

Date Revised: Aug 18,2018

Date Accepted: Sep 10,2018

Contribution

SS conceived, the idea and did statistical analysis. SF and SN did data collection and manuscript writing. SS did critical review and final approval of manuscript. All authors contributed equally.

All authors declare no conflict of interest.

This article may be cited as: Sultan S, Fatima S, Kawal F. Treating heart patients by enhancing positive emotions through positive psychology intervention. Pak Heart J 2018;-51(04):303-8

ABSTRACT

Objective: To manage the symptoms of coronary heart disease through enhancing positive emotions.

Methodology: In this cross sectional study, data was collected from a sample of cardiac patients from Institute of Cardiology Multan from 1st March to 31st May 2017. CHD patients of this sample were selected on the basis of their similar characteristics and equal scores on measures. Then utilizing the experimental approach, CHD patients were randomly assigned to the intervention and control groups. Only CHD patients in intervention group received the positive emotion therapy. Both groups provided data on measures of gratitude, optimism, happiness, and CHD symptoms before and after administering positive emotion intervention to intervention group. In this study independent and paired sample t-tests, the analyses of comparison between and within the both groups were employed.

Results: A sample of 127 cardiac patients were included in the study. CHD patients were 40. Patients were randomly assigned to the intervention (n=20) and control groups (n=20). Only CHD patients in intervention group received the positive emotion therapy. A significant decrease in CHD symptoms and an increase in positive emotions of patients in intervention group after receiving the positive therapy than before was found. Patients of intervention group were found with low CHD symptoms and high positive emotions after therapy than that of control group.

Conclusion: Thus the finding of the present study suggests positive psychology intervention was found effective for enhancing positive emotions in CHD patients.

Key Words: Gratitude, Happiness, Optimism, CAD Symptoms, Positive intervention

INTRODUCTION

Positive emotions are thought to decrease the incidence of coronary heart disease (CHD). As these emotion are considered to be protective factor against CHD after making adjustment for psychological distress and hostility.¹ Although number of evidences are available which state that psychological aspects play important role in treating as well as increasing cardiac problems. It has been also stated that positive emotions such as optimism are related to better cardiac health outcomes in cardiac and non – cardiac patients, after controlling for demographic variables, risk factors associated with heart disease and other health issues.¹⁻⁵ Moreover, relationship between positive traits and outcomes of cardiac health are independent of adverse psychological conditions means enhances cardiac health due to the absences of psychological disorder or distress and presences of positive characteristics.^{1,6-10}

In the development and progression of cardiac symptoms psychological symptoms play key role. Many researches on cardiac patients have focused on psychological factors to improve the health outcomes. These such studies have targeted very few cardiac patients who have been diagnosed with psychiatric symptoms for instance clinical depression. However, very few studies have been conducted to study well the positive psychological states in cardiac patients, such as gratitude, mindfulness, optimism, character strengths; and even less researches have been done to cultivate the positive attributes in cardiac patients through positive psychology interventions. In some aspects, specific exercises have been used by the field of positive psychology to promote systematic and deliberate activities to cultivate positive emotions, states and cognition.¹¹⁻¹³ Therefore, intentional behavior is promoted through positive psychology interventions to increase positive emotions and cognitions to enhance over all well being and focused behaviors in numerous areas, comprising gratitude (e.g. to recall positive life events systematically), altruism (e.g.. to perform acts of kindness), optimism (e.g. to imagine positive future outcomes) and happiness (e.g. voluntarily helping other people).¹⁴ If these interventions are implemented systematically, episodically then they have meaningful impact on participants and increase positive attributes, otherwise if these activities are performed irregularly then would not help to enhance well being.¹⁵

Sin and Lyubomirsky conducted a meta-analysis on positive psychology intervention of more than 50 trials and included over 4,000 participants, findings revealed that positive intervention improve the level of happiness, decrease depression and enhance overall well being.¹⁶ Published models on positively oriented interventions have also linked positive emotions with the improvement in cardiac outcomes comprise psychological as well as behavioral components.² Cardiac patients who have greater emphasis on optimism and other positive attributes involve in healthy

behavior; for example, healthy diet, physical activity, termination of smoking & drugs and medical adherence; report superior cardiac outcomes.^{7,17} Fredrickson and Levenson have reported that damaging effects of negative emotions can be reserved through the inducement of positive emotions. For instance, exposure to positive emotions such as joy, happiness, satisfaction, indicate decrease in cardiovascular problems.^{18,19}

Although, to date extensive literature is available on positive psychology interventions that how these interventions enhance positive emotion in healthy individual and also undo the effect of negative emotions. But there is noticeably less researches on these interventions which positively effect medically ill people. Thus, the main objective of this study is to facilitate/ manage the symptoms of coronary heart disease through enhancing positive emotions.

METHODOLOGY

This cross sectional study implies repeated measure design with sample of cardiac patients taken from Institute of Cardiology, Multan; during 1st March 2017 to 31st May 2017. From a sample of 127 CHD patients aged between 40-60 years (mean age = 50.60), 40 cardiac patients were selected on the basis of their characteristics (age between 43 - 52 years; mean age = 48.64, gender only male, education graduation and middle economic class) and more or less similar scores on CHD symptoms check list.

Sample of cardiac patients was divided into two groups equally i.e. experimental and control. Through random assignment participants were equally assigned to both groups. Thus Before the administration of Positive Psychology Intervention, all the participants were asked to complete measures of Gratitude Questionnaire, life orientation test–revised, and coronary artery disease (CAD) symptoms checklist for the purpose of pre-testing and post-testing.

The Gratitude Questionnaire -Six Item Form (GQ-6) developed by McCullough, Emmons & Tsang 20 measures the feelings and experiences towards gratitude in daily life. It is a seven point likert, self-reported six item scale ranging from 1 = strongly disagree to 7 = strongly agree. Two items are reversed scored these are 3 and 6. Overall score of scale ranges between from 6 to 42. High score depicts that individual are thankful and grateful the gifts and benefits they have got from others. This questionnaire has overall good internal reliability i.e. α between .82 and .87.

The Life Orientation Test-Revised (LOT-R) was developed by Scheier, Carver and Bridges 21 to measure individual differences in optimism versus pessimism. LOT-R is a self-reported 10-item scale, three items measure optimism, three items measure pessimism, and four items are used as fillers. LOT-R scale ranges from 0 = strongly disagree to 4 = strongly agree. Items 1, 4, 10 measure optimism, thus these

items were utilized in this study to assess optimism in cardiac patients.

Subjective Happiness Scale is a four items scale developed to assess subjective happiness. Each item is completed by selecting one of seven options related to statement and options are different for each of the four questions. Item number four is reverse coded.²²

Coronary heart disease symptoms severity was assessed through CAD Symptoms Check List. It evaluates 10 symptoms of heart disease reported on zero to two point scale. High scores on checklist indicate high level of symptom severity.

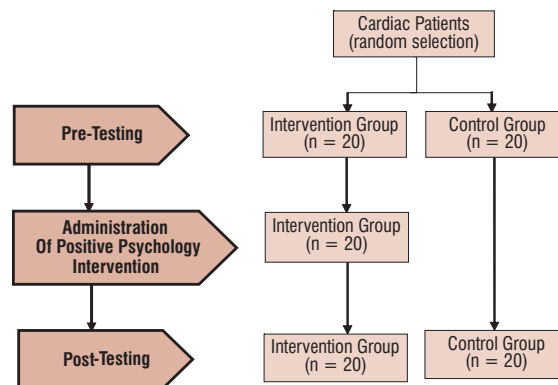
Prior to the implementation of positive psychology intervention, permission was taken from institute and informed consent was obtained from the CHD patients. Patients were given booklet containing demographic information and questionnaires of GQ-6, LOT-R, SHS and CAD symptom checklist to collect data for pre-testing. After obtaining data Positive Psychology Intervention was then administered to the patients having CHD of intervention group, whereas control group patients did not receive any psychological intervention, however their pharmacological treatment was going on as it is. Positive Psychology Intervention is an 8-week, phone-based intervention that focuses on enhancing positive psychological attributes such as optimism, kindness, and gratitude for CHD patients. Intervention administered on phone is more feasible for such

patients rather than personal visits, as these patients may have considerable functional limitations.

The first session of the intervention was approximately lasted for 45 minutes and held in hospital before the patient was discharged. In the first session, study procedure was explained, instruction manual was provided, basic information about positive psychology was reviewed and purpose of the positive psychology intervention was discussed by the instructor. After that instructor assigned first exercise to the patients, reviewed the exercise, and assigned next week's activity. After the first session, weekly phone call of approximately 15 minutes were conducted to analyze the exercise and prepare participants for the next week's exercises. Those participants who were in hospital at the time of the first scheduled phone call, the session was conducted in hospital instead of over the phone. Each of the exercises required approximately 20 min of writing about events, acts, goals, and/or feelings, allowing participants to have a physical record of their work.

After the administration of positive psychology intervention again data was collected from control and experimental group on the scales of GQ-6, LOT-R, SHS and CAD symptom checklist for the post-testing. Participants were assured that the confidentiality of the data will be maintained. All the data collected before and after the administration of positive psychology intervention were analyzed through independent sample t-test and paired sample t-test using SPSS 21. Study procedure is shown in figure 1

Figure 1 Study Procedure



RESULTS

In order to compare the control and intervention groups in terms of their positive emotions, independent samplet-tests and paired sample t-tests were computed.

The differences in the scores of gratitude, optimism, happiness, and coronary artery disease symptoms of control and intervention groups prior to administration of positive psychology intervention is shown in table 1. Findings suggest that patients in both groups are similar on their positive emotions and CAD symptoms.

The significant differences in the scores of gratitude, optimism, happiness, and coronary artery disease symptoms of control and intervention groups after the administration of positive psychology intervention is shown in table 2. Findings demonstrate that patients in intervention group are found with high positive emotions and low CAD symptoms than that of control group.

The comparison between pre and post scores of gratitude, optimism, happiness, and coronary artery disease symptoms of control group is shown in table 3. Results suggest that patients in both testing show no differences in their positive emotions and CAD symptoms.

The significant differences between pre and post scores of gratitude, optimism, happiness, and coronary artery disease symptoms of intervention group is shown in table 4.

Results suggest that patients in intervention group are found with an increase in their positive emotions and a decrease in CAD symptoms.

Table 1: Comparison b/w Control and Intervention Groups on the Scores from Pre-testing of Positive Emotions and CAD Symptoms

Variables	Control Group (n = 20)		Intervention Group (n = 20)		t	p
	M	SD	M	SD		
Gratitude	13.00	3.01	11.90	3.06	1.47	0.13
Optimism	2.75	1.68	3.00	1.17	-.546	0.29
Happiness	7.80	2.04	7.25	2.17	-.825	0.21
CAD	17.45	2.39	17.80	2.44	.458	0.32

df = 48, p= ns

Table 2: Comparison between Control and Intervention Groups on the Scores from Post-testing of Positive Emotions and CAD Symptoms

Variables	Control Group (n = 20)		Intervention Group (n = 20)		t	P
	M	SD	M	SD		
Gratitude	13.45	2.80	33.25	3.80	-18.77	0.00
Optimism	7.70	2.18	21.90	2.94	-.17.37	0.00
Happiness	3.10	1.52	10.00	1.83	-12.95	0.00
CHD	17.14	10.92	11.02	8.61	12.41	0.00

df = 48, ***p < 0.001

Table 3: Comparison between the Scores of Pre and Post-testing of Control Group for Positive Emotions and CAD Symptoms

Variables	Pre-Testing (n = 20)		Post-Testing (n = 20)		t	P
	M	SD	M	SD		
Gratitude	13.00	3.00	13.45	2.79	-1.40	.088
Optimism	2.75	1.68	3.10	1.51	-.907	.188
Happiness	7.80	2.04	7.70	2.17	.165	.435
CHD	17.45	2.39	16.25	2.82	1.50	.075

df = 48, p= ns

Table 4: Comparison between the Scores of Pre and Post-testing of Experimental Group for Positive Emotions and CAD Symptoms

Variables	Pre-Testing (n = 20)		Post-Testing (n = 20)		t	P
	M	SD	M	SD		
Gratitude	11.90	3.05	33.25	3.79	-24.08	0.00
Optimism	3.00	1.16	10.00	1.83	-13.78	0.00
Happiness	7.25	2.17	21.90	2.93	-16.69	0.00
CHD	17.80	2.44	4.50	3.15	15.27	0.00

df = 48, ***p < 0.001

DISCUSSION

In this study, the aim was to treat cardiac symptom by enhancing positive emotions through the implementation of positive psychology intervention. The results suggested that positive psychology intervention successfully enhanced the positive symptoms in cardiac patient. As Positive psychological traits decrease risks of cardiac health problems, might reduce rates of mortality.²⁴ These positive emotions interventions produce intentional activities which enhance gratitude, optimism and happiness; can counteract the effects of negative emotions, as well as generating

positive thoughts and positive experiences. Thus, this can be said that these psychological factors are likely to an important role in the reduced risk for cardiac disease.²

The results of the current are consistent with the previous researches that happiness is increased through positive thoughts which are experienced through gratitude and optimism interventions.^{1,22} Positive psychology interventions are directed to target activities in numerous areas, such as altruism (for example doing kind acts), gratitude (for example remembrance of positive lifetime incidents), utilizing one's own strengths intentionally, and optimism (or example visualisation of positive impending conse-

quences).²³

However, the most common positive attribute which has been associated with coronary heart disease is optimism.²⁻⁴ Optimism as a trait produces positive and confident expectation about one's own future. These findings are confirmed Giltay, and his colleagues in Zutphen Elderly Study that optimism is linked with reduced risk for coronary heart disease.²⁵ Boehm, and Kubzansky stated that optimistic people experience 50% reduced risk of initial coronary heart event as compared to those are less optimistic.²⁶

Positive psychology interventions focus on happiness inducing activities to reduce the risk of cardiovascular disease for medically ill individuals.²⁶ A study by Danner, Snowdon, and Friesen suggest that those individuals who express more positive emotion in the form of happiness, love, etc. live up to ten years more than those who experience less positive emotions.²⁷ Several studies have reported that prolonged negative emotions and stress can lead to cardiovascular problems, but experiences positive emotions can undo the lingering effect of negative emotion even in health issues.¹⁹

LIMITATIONS

Although this study has produced significant findings but its findings should be interpreted in the light of some limitations. Firstly, the sample size was small due to which findings cannot be generalized to other populations. Secondly, follow-up was not taken to measure the stability of positive emotions over a longer period of time. Thirdly negative attribution/emotion such as depression, hopelessness, etc are not assessed that how much they decreased through the implementation of positive psychology intervention. Thus, future researches should consider these limitations while conducting research on this topic.

CONCLUSION

In summary, positive psychology intervention enhances positive emotions like happiness, optimism, gratitude, etc. and decreases the risk for the incidence of coronary heart disease. However, positive emotions are protective factors for CHD patients and also undo the effect of negative emotions.

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