

EFFECT OF STRESS INOCULATION TRAINING ON EMOTIONAL STATES AND SYMPTOMS OF ILLNESS IN PATIENTS OF CORONARY HEART DISEASE

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SS did literature review, research design and also finalized the manuscript. SG, SK helped in data collection, analysis in final draft. All authors contributed significantly to the submitted manuscript.

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ABSTRACT

Objective: To assess the effectiveness of Stress Inoculation Training (SIT) on emotional states and severity of symptoms of coronary heart disease (CHD) among cardiac patients.

Methodology: This cross sectional study was conducted at Institute of Cardiology Multan from January 2015 to August 2015. The cardiac patients were randomly assigned to the intervention (n = 41) and control groups (n = 42). Pre and post data on measures of profile of mood states (POMS) and coronary heart disease symptoms check list (CHDS) were collected from both groups before and after the administration of SIT. The data was analyzed by employing independent and paired sample t-tests.

Results: About 83 patients were included in the study. Significant differences were found in pre and post scores on emotional states and symptoms of CHD for intervention group (t = 3.68, p < .001 and t = 8.81, p < .001 respectively) while insignificant findings were found for control group. The SIT was found efficient for individual emotional states of depression, anxiety, hostility, inertia, confusion, and vigor at p < .001. Patients after SIT also reported a decrease in their symptoms of CHD at p < .001.

Conclusion: From the present findings, SIT seems absolutely effective in decreasing the negative emotional states and severity of symptoms of CHD among cardiac patients. SIT can be considered as practicable method to reduce the stress level associated with CHD.

Key Words: Coronary Heart Disease, Emotional States, Stress Inoculation Training, Symptoms of Heart Disease

INTRODUCTION

Cardiac patients during their hospitalization usually report high depression, anxiety, stress, and even after discharge from hospital they experience the greater emotional disturbances. Moderate to severe levels of mood disturbances have been observed among 40 to 50% of cardiac patients during their hospitalization and even at 1-year follow up, about 20% of them remained to describe the same levels of anxiety and depression.¹ If appropriate psychosocial interventions are provided to the cardiac patients during hospitalization, perceived quality of hospital environment, productive incorporation of advised rehabilitation and objectives, and quality of life after discharge and at home, can be affected by these intervention.²

A patient's emotional state and over all feelings can also impact the rehabilitative attempts made by patient. Sick people experiencing depression and stress generally show more pessimistic behaviors and don't believe they can overcome illnesses by their relieving behaviors.³ However patients with positive mood state and emotions may believe they can carry out illnesses and can think for their future plans.⁴ Moreover, it has also been examined that patients participating in interventions of stress management report greater betterment as compared to those who do not participate in rehabilitation programs.^{5,6}

Many of the cardiac centers usually provide the facility of rehabilitation to the cardiac patients. The nature of mode of rehabilitation varies among hospitals. Most of them normally offer health awareness and exercise program combined. In spite of an extensive literature available on effectiveness of psychosocial interventions focusing on decreasing risk factors like anxiety and stress, these interventions are rarely admitted in cardiac rehabilitation.^{7,8}

In developing countries, like Pakistan, the health department is facing many problems of unjust and poor approach to health services, high cost of treatment and surgery, negligence of health care, and little consideration of mental health. In line with this, CHD has become a serious medical issue in community.⁹ Most of the literature investigating CHD concentrate on just biological risk factors that are unchangeable factors. However, psychosocial risk factors have also been found more significant contributing factors in progression and continuity of CHD.¹⁰⁻¹⁴ Presently, psychosocial factors have been confirmed as determining risk factors in chronic illness.^{15,16}

Moreover, the age of onset of CHD in Pakistan is decreasing towards adolescence that is mainly due to the life style behaviors and psychological problems. Thus an attention on psychological explanation of CHD is required because the discipline of psychology also aims to reduce the psychosomatic illness that in turn may decrease cost of

treatment and may also improve health and life quality.^{17,18}

Patients' ways of perceiving their illnesses and handling with emotional burden, typically affect their coping methods of getting relief from pains. If patients remain more engaged in thinking about their disease, they are more likely to have persistent stressful reactions. Stress Inoculation Training (SIT) is one of the psychological intervention that facilitate the patients to realize the effect of their cognition and thoughts on their illness. SIT assists disturbed people become aware of how they can employ behaviors to manage their stress. SIT helps patients to develop a more positive cognition, healthy thoughts, and effective coping skills. SIT doesn't serve only in teaching the new skills but also create sense of efficacy in using these skills. SIT moves clients from perception of themselves as "victims" to becoming "survivors".¹⁹

SIT is a form of cognitive-behavioral therapy that is flexible in nature. SIT is within three overlapping phases:

1. A conceptual educational phase.
2. A skills acquisition and skills consolidation phase.
3. An application and follow-through phase.

In first phase of conceptual education, an alignment is built between client and therapist. Patients are aware of their distress levels and made clear of how their emotional states and coping processes are important in their illness. In second phase of skill acquisition, patients are trained to establish the new coping ways for their illness and are also directed how to strengthen the already existing coping skills. In third phase of application, patients are facilitated to remain engage in employing coping skills through the use of different methods such as imagination, imitation, role playing and rehearsal.¹⁹

Literature demonstrated the significant effectiveness of SIT interventions with medical patients who receive procedural and sensory information through its educational component. Patients and often their caretakers are also provided opportunities to exercise coping skills. Keeping the significance of SIT that brings ways to patients for using their own favored coping strategies, we also plan to administer this SIT intervention with cardiac patients. This study was designed with empirical approach to see the impact of SIT on emotional states and severity of symptoms of CHD.

METHODOLOGY

This cross sectional study was completed using repeated measure design at Cardiology Center Multan from January 2015 to August 2015. Initially, the details about patients with CHD awaiting for surgery in surgical unit of hospital were extracted from the hospital record. Of this sample, a group of male patients ranging in age between 50-55 years were

selected through purposive sampling technique. This sample of selected patients were matched on gender, age, education, and economic class.

The patients were then divided into two groups; experimental (intervention) and control. All the patients were randomly assigned to the both groups. Prior to the administration of the stress inoculation training to the experimental group, the data were collected from patients of both groups of intervention and control on the measures of Profile of Mood State (POMS) and Coronary Heart Disease Symptoms Check List (CHDSC).^{20,21}

Emotional states were measured using a self-administered POMS. It is an adjective rating scale that has been designed to evaluate emotional state that are considered as transient and are likely to respond quickly to therapy.²⁰ POMS comprises 65 adjectives rated on 0-4 and assesses the six components of emotions; depression/dejection, anxiety/tension, hostility/anger, inertia/fatigue, confusion/bewilderment, and vigor/activity. The former five are believed as accounting for negative mood states and the last one regarded as positive. A composite score for total mood disturbance is calculated by adding the scores on first five negative domains and then subtracting the score on one positive domain. Higher scores shows the greater mood disturbances. The reliability of the POMS has been found satisfactory in literature.^{22,23} Severity of symptoms of CHD were measured using CHD Symptoms Check List. It assesses 20 symptoms of CHD rated on 0-2 scale. Higher score shows the higher degree of severity of symptoms of SHD.

Stress inoculation therapy was then administered to the patients of intervention group, while the patients in control group remained on simple hospital medication and no therapy for stress management was given to them. SIT was carried out within three phases; in phase of initial conceptual education, the coalition and confederation was build between the patient and therapist. Patients were educated to

make them understood about how their level of stress and coping ways are effective in their illness. In second phase of SIT, patients were given the training to develop the new coping skills and to consolidate the already existing coping skills. Patients were also assisted to remove intra- and interpersonal barriers if exist to their coping. In third phase of SIT; application and follow-through, the patients were provided the opportunities to employ the coping skills through different techniques like imagination, modeling, role playing, and role rehearsal. SIT was completed in 12-15 sessions of each 30 minutes-1 hour weekly. However, the intervention was performance-based rather than time-based.

At the end of intervention, patients of both intervention and control group completed POMS and CHD symptoms check list. All the data were then statistically analyzed on SPSS-20 at 0.05 level of significance.

RESULTS

A sample of 231 patients with CHD awaiting for surgery were included. Of them 83 male patients ranging in age between 50-55 years were selected. These 83 patients were then divided in to two groups. To compare the differences in pre and post levels of emotional states (Table 1) and severity of symptoms of CHD (Table 2) before and after the SIT between the intervention and control group, the independent sample t-tests were computed while to examine the differences within the groups, the paired sample t-test were employed. Moreover, to measure the differences on individual emotional states and symptoms of CHD, the independent sample t-test were performed.

Table 1 presents the findings for the comparison of both intervention and control groups for their scores on POMS. Results pertaining to intergroup comparison demonstrate insignificant difference before administering SIT ($t = 1.22$, $p > .05$) while show the significant difference after SIT ($t = 2.78$, $p < .001$). Findings in relation to intragroup

Table 1: Comparison between Intervention and Control Group for their Scores on POMS Before and After SIT

		Intervention Group (n=41)	Control Group (n=42)	Intergroup Comparison	
		M ± SD	M ± SD	t	p
Intragroup Comparison	Pre	21.33 ± 17.42	19.74 ± 20.08	1.22	> .05
	Post	6.34 ± 9.77	16.93 ± 13.44	2.78	< .001
	T	3.68	1.37		
	P	< .001	> .05		

Table 2: Comparison between Intervention and Control Group for their Scores on CHD Symptoms Check List Before and After SIT

		Intervention Group (n=41)	Control Group (n=42)	Intergroup Comparison	
		M ± SD	M ± SD	t	p
Intragroup Comparison	Pre	17.14 ± 2.56	17.63 ± 2.06	1.07	> .05
	Post	5.43 ± 4.21	15.81 ± 3.35	8.81	< .001
	T	4.75	1.19		
	p	< .001	> .05		

comparison suggest the significant difference in pre and post scores of SIT group ($t = 3.68, p < .001$) while insignificant difference in pre and post scores of control group ($t = 1.37, p > .05$).

Table 2 indicates the findings for the comparison of both intervention and control groups for their scores on CHDSC. Findings relating to intergroup comparison report insignificant difference before SIT ($t = 1.07, p > .05$) while illustrate the significant difference after SIT ($t = 8.81, p < .001$). Results pertaining to intragroup comparison demonstrate significant difference in pre and post scores of SIT group ($t = 4.75, p < .001$) while insignificant difference in pre and post scores of control group ($t = 1.19, p > 0.05$).

Table 3 depicts the significant effect of SIT on individual mood states of cardiac patients. Findings reveal the significant difference in pre and post scores on individual mood states for SIT group but not for control group.

Table 4 reveals the significant effect of SIT on individual symptoms of CHD of cardiac patients. Findings indicate the significant differences in symptoms of CHD before and after

SIT and control group remain.

DISCUSSION

Development and progression of CHD is caused generally by prolonged wretchedness and acute and chronic distress through many ways. Most of the ways from negative affect linked to CHD are identified by a combination of biological and behavioral factors connected with development of anxiety, depression, stress on the one hand, and with the consequences of CHD on the other.^{24,25} Physical inactivity, low social support, high-fat food patterns, smoking, and poor access to treatment and poor awareness of health issues are the behavioral pathways to CHD. All of these behavioral mechanism are related to the exposure and progression of clinical anxiety and depression.²⁶

Nevertheless, the combination of both behavior and biological factors is the significant aspect linking consistent exposure to negative affect with the later onset of clinical health problems particularly in the cardiovascular system. It is still in question, that any one mechanism independently could stimulate the development of any chronic illness, and many individuals with various cardiac risk factors will shortly have others. Groups of risk factors are essential for the onset of CHD. One group of these risk factors associated with psychosocial factors anticipate increased risk of acute coronary syndrome and sudden cardiac death.²⁷

The present study examined the emotional states and severity of symptoms associated with CHD among patients with coronary heart disease. Results demonstrated the high levels of anxiety, depression, anger, physical inactivity, confusion, and vigor associated with CHD. These findings are in line with the work of Krantz and McCeney who explored that emotional stress and mental distress appear to be stiff drivers of everyday ischemia in coronary heart patients, and negative emotional states may decrease gradual healing of CHD.^{5,25} Bennett and Carroll also reported

Table 3: Effect of SIT on Individual Mood States

	SIT Group			Control Group		
	Pre M ± SD	Post M ± SD	p	Pre M ± SD	Post M ± SD	p
Depression	6.37 ± 5.61	2.67 ± 4.62	< .001	6.11 ± 5.10	7.02 ± 6.51	> .05
Anxiety	8.41 ± 5.49	3.63 ± 5.13		7.28 ± 4.91	7.83 ± 5.42	
Hostility	4.01 ± 4.13	1.68 ± 2.87		3.11 ± 2.62	3.45 ± 2.86	
Inertia	8.15 ± 5.68	3.84 ± 4.73		7.73 ± 5.68	8.06 ± 5.87	
Confusion	5.91 ± 4.33	2.17 ± 3.09		6.38 ± 4.12	6.10 ± 4.74	
Vigor	13.82 ± 6.61	16.54 ± 6.23		12.73 ± 7.15	10.46 ± 7.15	

Table 4: Effect of SIT on Individual Symptoms of CHD

	SIT Group			Control Group		
	Pre M±SD	Post M±SD	p	Pre M±SD	Post M±SD	p
Chest Discomfort	1.37 ± 0.61	0.29 ± 0.83	< .001	1.28 ± 0.71	1.01 ± 0.53	> .05
Shortness of Breathing	1.71 ± 0.39	0.06 ± 1.01		1.82 ± 0.17	1.76 ± 0.25	
Tightness	1.83 ± 0.72	0.48 ± 1.02		1.83 ± 0.72	1.87 ± 0.59	
Squeezing	1.90 ± 0.10	0.33 ± 0.99		1.90 ± 0.10	1.73 ± 0.88	
Abdominal Discomfort	1.95 ± 0.13	0.18 ± 1.00		1.95 ± 0.13	1.93 ± 0.08	
Indigestion	1.73 ± 0.42	0.49 ± 0.63		1.73 ± 0.42	1.53 ± 0.92	
Nausea	1.91 ± 0.02	0.61 ± 0.91		1.91 ± 0.02	1.84 ± 0.17	
Dizziness	1.87 ± 0.28	0.29 ± 0.99		1.87 ± 0.28	1.81 ± 0.19	
Palpitation	1.67 ± 0.71	0.57 ± 1.02		1.67 ± 0.71	1.59 ± 0.41	
Vomiting	1.24 ± 0.42	0.53 ± 0.63		1.24 ± 0.42	1.21 ± 0.64	

that myocardial infarction patients during hospitalization experience moderate to severe degrees of anxiety, and the researches proposed the anxiety as an important predicting contributor in rehabilitation, and to some extent has been found as a leading cause of sudden cardiac death.^{1,28}

Krantz and McCeney; Oldridge et al have pointed out that depression is another psychosocial prognostic factor that contribute in cardiac mortality.^{5,29} Negative mood state is also linked with decreased bodily pain, and in a study of college students found that people with negative affect were less likely to involve in physical activity, healthy food, and better self-care management.³⁰ Thus a successful rehabilitation program administering psychosocial intervention always improve the positive emotional mood because any particular psychological intervention impacts directly on client's own perception of his/her disease and health. The POMS has been found a useful measure to assess cardiac patients' emotional health.³¹ Lorr et al and McNair have supported the POMS as a well-structured scale for evaluating current emotional state, and to estimate the effectiveness of various interventions for cardiac patients during rehabilitation.^{22,23}

Although the effect of SIT has not been previously tested in cardiac patients, the improvement in emotional states is in line with former studies indicating improved emotional states in medical patients. For instance, Jay and Elliott evaluated mood states in parents of children with pediatric leukemia.³² Researchers showed a short film to the parents just before the child's medical treatment. In that film, the

model parents were employing the different coping skills such as self-talking, imagination, imitation and rehearsal. The parents were then provided the time and space to exercise these coping skills. Findings revealed that parents after SIT were found with low anxiety and increased positive mood states. SIT has been employed in many medical settings; with rape victims for their anger and depression control, for forensic investigation, and parenting practices.³³

SIT has been found to decrease emotional distress and symptoms of CHD in the present study. These findings are in consistent with many other studies employing SIT with other medical patients. Many of the techniques of SIT used with female early stage breast cancer patients reduced the burden of disease. The educational phase of SIT, developed the awareness of disease impact and decreases the myths associated with breast cancer. Patients adopted the ways of reducing stress through coping skills and built hope for future.³⁴ Siegal and Peterson also utilized alike multifaceted coping skills of self-statement, guided imagery, and relaxation technique to reduce the stress level in young dental patients.³⁵ Langer et al. also reported in their study that SIT-treated medical patients were discharged earlier from hospital than non-SIT-treated patients.³⁶ In fact patients were trained in coping skills before going to surgeries, and then compared to control group the SIT-group accounted a significant relief from their stress levels. All these previous researches supported the findings of the current study that highlighted first, the importance of patients' perception about CHD, and then employed the coping strategies of relaxation, self-rethinking, and imagery rehearsal to improve

the emotional states and to reduce the symptoms of CHD.

LIMITATIONS

The SIT coping skills effect was short-term, and there was no follow-up testing to assess the effectiveness of SIT for long-term. This study has employed only three techniques of relaxing, rethinking, and imagery, it is difficult to confirm the effect of overall SIT for cardiac patients. Further, the selection bias of sample is another limitation. Though sample has been taken from a quite homogeneous pool and randomly assigned in intervention and control groups, but is not representative of the whole population because of conveniently approached initially.

CONCLUSION

In conclusion, the findings affirm the notion that SIT has improved the emotional states and reduced the severity of symptoms of CHD. It also proposed that SIT may have significant psychosocial advantages to recovery from CHD and should be included in the cardiac rehabilitation as an integral part of its agenda.

REFERENCES

- Bennett P, Carroll D. Cognitive-behavioral interventions in cardiac rehabilitation. *J Psychosom Res.* 1994;38:169-82.
- Milani RV, Lavie CJ, Cassidy MM. Effects of cardiac rehabilitation and exercise training programs on depression in patients after major coronary events. *Am Heart J.* 1996;132:726-32.
- Salovey P, Birnbaum D. Influence of mood on health relevant cognitions. *J Pers Soc Psychol.* 1989;57:539-51.
- Salovey P, Rothman AJ, Detweiler JB, Steward WT. Emotional states and physical health. *Am Psychol.* 2000;55:110-21.
- Krantz DS, McCeney MK. Effects of psychological and social factors on organic disease: a critical assessment of research on coronary heart disease. *Annu Rev Psychol.* 2002;53:341-69.
- Erdman AM, Duivenvoorden HJ, Verhage F, Kazemier M, Hugenholtz PG. Predictability of beneficial effects in cardiac rehabilitation: a randomized clinical trial of psychosocial variables. *J Cardiopulm Rehabil.* 1986;6:206-13.
- Ornish D, Brown SE, Scherwitz LW, Billings JH, et al. Can lifestyle changes reverse coronary heart disease? *J Lancet.* 1990;336:129-33.
- Burg MM, Jain D, Soufer R, et al. Role of behavioral and psychological factors in mental stress-induced silent ventricular dysfunction in coronary artery disease. *J Am Coll Cardiol.* 1993;22:440-48.
- Strik JJ, Denollet J, Lousberg R, Honig A. Comparing symptoms of depression and anxiety as predictors of cardiac events and increased health care consumption after myocardial infarction. *J Am Coll Cardiol.* 2003;42:1801-7.
- Twisk JW, Snel J, de VW, Kemper HC, van MW. Positive and negative life events: the relationship with coronary heart disease risk factors in young adults. *J Psychosom Res.* 2000;49:35-42.
- Albus C. Psychological and social factors in coronary heart disease. *Ann Med.* 2010;42:487-94.
- Creed F. The importance of depression following myocardial infarction. *Heart.* 1999;82:406-8.
- Bunker SJ, Colquhoun DM, Esler MD, Hickie IB, Hunt D, Jelinek VM, et al. "Stress" and coronary heart disease: psychosocial risk factors. *Med J Aust.* 2003;178:272-6.
- Kuper H, Marmot M, Hemingway H. Systematic review of prospective cohort studies of psychosocial factors in the etiology and prognosis of coronary heart disease. *Semin Vasc Med.* 2002;2:267-314.
- Jiang W, Glassman A, Krishnan R, O'Connor CM, Califf RM. Depression and ischemic heart disease: what have we learned so far and what must we do in the future? *Am Heart J.* 2005;150:54-78.
- Rutledge T, Linke SE, Krantz DS, Johnson BD, Bittner V, Eastwood JA, et al. Comorbid depression and anxiety symptoms as predictors of cardiovascular events: results from the NHLBI-sponsored Women's Ischemia Syndrome Evaluation (WISE) study. *Psychosom Med.* 2009;71:958-64.
- Yousefy AR, Ghassemi GR, Sarrafzadegan N, Mallik S, Baghaei AM, Rabiei K. Psychometric properties of the WHOQOL-BREF in an Iranian adult sample. *Community Ment Health J.* 2010;46:139-47.
- Yousefy A, KhayamNekouei Z. Basis of Cognitive-Behavioral Trainings and its Applications in Recovery of Chronic Diseases. *Iran J Med Educ.* 2011;10(5):792-800.
- Meichenbaum D. Stress inoculation training: A 20-Year Update. In P. M. Lehrer R. L. and Woolfolk (Eds.), *Principles and practice of stress management* (pp. 373-406). New York: Guilford Press; 1993.
- McNair DM, Lorr M, Droppleman LF. *Manual for the Profile of Mood States.* San Diego, Calif: EDITS/Educational and Industrial Testing Service; 1992:1-40.

21. Coronary Artery Disease Symptoms Checklist. CardioDx Inc; 2015.
22. Lorr M, Daston P, Smith IR. An analysis of mood states. *Educ Psychol Meas.* 1967;27:89-96.
23. McNair D, Lorr M. An analysis of mood in neurotics. *J Abnorm Soc Psychol.* 1964;69:620-27.
24. Carney R, Freedland K, Miller G, Jaffe A. Depression as a risk factor for cardiac mortality and morbidity: A review of potential mechanisms. *J of Psych Rese* 2002;53:897-902.
25. Rozanski A, Blumenthal J, Kaplan J. Impact of psychological factors on the pathogenesis of cardiovascular disease and implications for therapy. *Circul* 1999;99:2192-217.
26. McCaffery JM, Frasure-Smith N, Dube MP, Theroux P, Rouleau GA, Duan Q, et al. (2006). Common genetic vulnerability to depressive symptoms and coronary artery disease: A review and development of candidate genes related to inflammation and serotonin. *Psychosomatic Medicine* 2006;68:187-200.
27. Gehi AK, Lampert R, Veledar E, Lee F, Goldberg J, Jones L, et al. A twin study of metabolic syndrome and autonomic tone. *J of Cardio Electro* 2009;20: 422-28.
28. Dennolet J. Emotional distress and fatigue in coronary heart disease: the global mood scale (GMS). *Psychol Med* 1993;23:111-21.
29. Oldridge N, Streiner D, Hoffman R, Guyatt G. Profile of mood states and cardiac rehabilitation after acute myocardial infarction. *Med Sci Sport Exerc.* 1995;27:900-5.
30. Shephard RJ, Kavanaugh T, Klavara P. Mood state during postcoronary cardiac rehabilitation. *J Cardiopulm Rehabil.* 1985;5:480-4.
31. Ross R. Pathogenesis of arteriosclerosis: a perspective for the 1990's. *Nature* 1993;362:801-9.
32. Jay SM, Elliott CH. (1990). A stress inoculation program for parents whose children are undergoing painful medical procedures. *Journal of Consulting and Clinical Psychology* 58;799-804.
33. Meichenbaum D. Treating individuals with anger-control problems and aggressive behaviors. Waterloo, Ontario, Canada : Institute Press; 2001 .
34. Cruess DG, Antoni MH, McGregor BAS, Kilbourn KM, Boyers AE, et al. Cognitive behavioral stress management reduces serum cortisol by enhancing benefit finding among women being treated for early-stage breast cancer. *Psychosomatic Medicine* 2000;62:304-8.
35. Siegal LJ, Peterson L. Stress reduction in young dental patients through coping skills and sensory information. *J of Consul and Clin Psych* 1980;48:785-7.
36. Langer T, Janis I, Wolfer J. Reduction of psychological stress in surgical patients. *J of Expe Soc Psych* 1975;11:155-65.