

STUDY TO ASSES STRESS AMONG CARDIAC SURGICAL PATIENTS

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ABSTRACT:

Stress brings stimulation to sympathetic nervous system, this in turn stimulates releasing of corticotrophic hormone, cortisol, adrenaline and noradrenaline. These hormones bring about vasoconstriction and releasing excess of glucose to meet the forth coming fight. On observation of stress resilience i.e. confidence, social support and capacity to recover from negative events including social and spiritual potentials, have increased from preoperative period to follow up period. This shows that there is increase in the confidence among cardiac surgical patients recovering from cardiac disease after cardiac surgery.

Various dimensions of stress and quality of life show that there are observable significant improvement changes found from preoperative cardiac patients to follow up cardiac patients. Statistically there is significant correlation between personality and denial/blame in coping strategies, and again there is significant relationship between personality and environment domain in quality of life among cardiac surgical patients. It was also found significant association between stress and anxiety during preoperative period among cardiac surgical patients. Mean while it was also found significant association between stress and coping strategies during follow up period among cardiac surgical patients.

Key words : Stress, myocardial infarction, anxiety, coping strategies.

INTRODUCTION:

Health is wealth – a proverb – to live as healthy as possible for as long as possible is the natural wish of every person for oneself and for his/her family [1]. In this regard stress plays its own role, as stress normally is a healthy one that motivates, moves the person for usual daily routine. Stress is a pressure – force and a strain, a state of physical mental tension. Some take it as usual phenomena and some others take it rather seriously, yet we do need some stress in our regular lives that brings positive outcomes. Positive stress gives energy to work and results in increased productivity. On the other hand negative stress can perpetuate a down word

spiral and may lead to more serious and complicated situations.

Heart is life giving wonderful pump, a simple machine with a sacred mission. William Harvey termed the heart as “the sovereign of the body”; today man knows the heart as a technical motor piece and a timeless metaphor. It is protected in a bone structured chest cavity. The heart links body to the spirit, further heart is attached to a seat of mind with different chores of feelings and emotions.

Medical terminology acute myocardial infarction (AMI or MI), and more commonly known as a ‘heart attack’, is a medical condition that occurs when the needed blood supply to a

part of the heart is interrupted. The resulting 'ischemia' or oxygen shortage causes damage and that leads to the potential death of heart tissue. At this stage it is a medical emergency, and the leading cause of unfortunate death.

The combined effect of stress, anxiety, anger, aggression, depression and Type A personality are important related factors relevant to Coronary Heart Disease (CHD) in addition to other factors. [2].

The physical and physiological risk factors of myocardial Infarction and other cardiac conditions in addition to stress are: (i) Old age (ii) Male gender (iii) Hypercholesterolemia (more accurately hyperlipoproteinemia, especially high low-density lipoprotein and low high density lipoprotein) (iv) Diabetes (v) High blood pressure (vi) Obesity. (vii) Socioeconomic factors such as inadequate education and lower income (particularly among women), and living with a partner may also contribute to the risk of MI (viii) Women who use combined oral contraceptive pills have a modestly increased risk of myocardial infarction. (ix) Inflammation in periodontal disease may be linked to coronary heart disease. (x) Possibly Genetic factor (xi) Congenital heart anomalies and (xii) Rheumatic disease of the heart. There are some preventive measures for ischemic heart diseases like; avoiding stress-full life, maintenance of proper weight by maintaining good nutritious low fat diet, regular exercises like walking, swimming etc., yoga, pranayama and dhyana, avoiding smoking and alcohol, control of diseases like diabetes mellitus, hypertension, hypercholesterolemia etc. Stress is an expected part of life in today's society. Stress is an experience, which always arises when an individual finds it difficult to cope with the changes or challenges that arise out of his/her environmental events.

Environmental events, which cause or produce stress, are known as stressors. The stressors can

be physical, psychological, social, political. Stress is a challenging event requiring physiological, emotional, cognitive, and behavioral adaptations [3]. Therefore there is no person without some level of stress or the other. Hence how we deal with our stress is important to our overall well-being. Because stress is a pressure, force, strain, a state of mental tension including it or affecting something else.

When stressed our body creates extra energy to protect itself from the impending complicated situation. This additional energy cannot be destroyed and it has to find a safe outlet. If not used it creates an imbalance within our system. Somehow the energy must be channeled into responses to regain a balance [4]. Stress is a natural part of our life, without some stress we would lose even our energy for living. Excess stress in our life interferes with our interpersonal relationships at home, on the job and society. Stress can waste our vitality and deplete our personal energy resources that could have been used for physical and mental balanced health. Medical research estimates as much as 90 percent of physical and mental illness and diseases are related to stress.

METHODOLOGY:

Research Design:

A descriptive research design was chosen for this study. In the present study the independent variable is cardiac surgery for such of the patients as have been suffering from cardiac diseases. Stress, anxiety, coping strategies, and the quality of life among the cardiac surgical patients during preoperative period and the follow up period, are considered as dependent variables.

Comparisons of all the variables were made in each if the cases between preoperative period

STUDY TO ASSES STRESS AMONG CARDIAC SURGICAL PATIENTS

and the follow up period, among all the cardiac surgical patients.

Cardiac Surgical patients before cardiac surgery (preoperative period)	Treatment	Cardiac Surgical patients after cardiac surgery (follow up period)
Stress, Anxiety, Coping Strategies and Quality of Life . (X) (N=300)	Cardiac surgery	Stress, Anxiety, Coping Strategies and Quality of Life. (Y) (N=300)

Y – X = Effect of cardiac surgery.

The pilot study was conducted to verify the suitability of all the scales, to check the clarity of the instructions and the length of time required to complete the questionnaires in all the three sample groups, before the final administration of the scales on the main sample of the study. This study has included several subjects preoperatively, and follow ups periods. The present research intends to investigate into the levels of stress and the coping strategies among cardiac surgical patients. Therefore, the samples chosen for the present study were the inpatients for cardiac surgery who have been proposed for surgery i.e, preoperative patients, they have undergone cardiac surgery and are admitted into the postoperative units, and the same patients who have come back after a month for the follow-up treatment to the cardiac OPD.

The purposive sampling technique was adopted in this study. The cardiac surgeries were performed on an average daily two to three in a day including children as patients. The sample size considered for the present study was 300 cardiac surgical patients, and the same patients were considered during their preoperative period and the follow-up period respectively.

Patients, whose age range is between 22 and 76 years (Mean 49) and are in preoperative, and the follow-up periods after the diagnosis of cardiac problems and also are willing to participate in the research study.

Kindler’s Personal Stress Assessment Inventory, Somatic Symptoms (1981).

This instrument assesses physical complaints experienced and expressed by the cardiac surgical patient: namely; head ache, body pains, flue rashes on the body etc.

This instrument contains 17 closed items and two open items for writing the problems, which are not covered in the list, the total 17+2 = 19 items. The scores were allotted for each item as, 4 for frequently (once a week or more), 2 for occasionally (less than once a week), 1 for rarely (less than once a month) 0 for never happens or occurs. Hence the maximum score is 68+8=76. However as the score increases indicates more the somatic problems.

RESULTS AND DISCUSSION

People who have had heart attack are posted for heart surgery. But the same heart attack and surgery on the heart naturally create more stress and anxiety on the cardiac patients and so they resort to various coping methods in order to relieve themselves of the stress. Subsequently this condition disturbs their quality of life. 4.

The Table No. 1 and Figure No. 1 reveal the age of the subjects (cardiac surgical patients) involved in this study. Majority of the subjects age 37.33% (112) happen to be between the class interval of 51 - 60, and the least1.33%, (4) only subjects have been between the class interval of 21 – 30. The remaining subjects 11.67% (35) happen to be between the class intervals of 31 – 40, 25.33% (76) subjects fall under 41 – 50 and 24.33% (73) subjects’ age is above 61 years of age.

Figure No. 2 shows habits among subjects, majority of the subjects 34.33% (103) have smoking habit, 20.33% (61) are in the habit of consuming alcohol 17.33% (52) are smokers as well as alcoholics, and 26.67% (80) have the habit of tobacco chewing. Only 34.67% (104) subjects, however no habits, whatsoever.

Figure No. 3 shows most of the subjects 58.67% (176) consume mixed diet (Veg. & Non-veg.). Whereas the remaining 41.33% (124) are regular vegetarians.

Most of the subjects 73% (219) had no family history of heart attack in their family: whereas 27.33% (81) subjects have family history of heart attacks in their family. The present research investigates into the role of stress because stress is the result of environmental reaction to the situation and how individuals cope with the situation.

Table No. 2 explains the habits of subjects among cardiac surgical patients. Most of these subjects numbering 176 mixed food eaters; among them 18.3% (55) subjects have no habits whatsoever. 19%(57) subjects are smokers: 16.67% (50) are alcoholics, 11.67% (35) subjects have the habit of consuming alcohol as well as smoking: 16% (48) subjects chew tobacco. Whereas there are 124 vegetarian subjects and among them 16.3% (49) have no habits at all, 15.3% (46) are smokers: 3.67% (11) are alcoholics, 5.67% (17) subjects have the habit of consuming alcohol as well as smoking and 10.67% (32) tobacco chewers. Figure No. 4 shows that most of the subjects are males 78.33% (235) and 21.67% (65) are females.

Table No. 3 shows that, the difference of mean and SD between preoperative period and follow up period. The somatic symptoms mean during preoperative period (M=49.79), which is higher than that of follow up period (Mean=49.50). This shows that somatic symptoms which were higher during preoperative period and have significantly reduced during the follow up

period. This reveals that the somatic symptoms are reduced after operation, and the operation really has brought some relief of those cardiac surgical patients.

On observation of stress resilience i.e. confidence, social support and capacity to recover from negative events, including social and spiritual potentials, has increased from preoperative period (Mean=49.50) up to the follow up period (Mean=50.85). This shows that there is marked increase in the confidence of recovering from cardiac disease among cardiac surgical patients after surgery.

The preoperative mean scores of psychological symptoms are higher than during the follow up period among the cardiac surgical patients. This indicates that the psychological symptoms are more during preoperative period due to fear of unknown prognosis; but during follow up period those symptoms have significantly reduced. The patients also look happy and their day today performances are better than preoperative period and they are happy about the operation too. It implies that cardiac surgery has had good and encouraging effect on heart patients in reduce their stress.

The Figure No. 5, shows the total mean scores of stress: Somatic symptoms, stress resilience and psychological symptoms among cardiac surgical patients during preoperative and follow up periods.

The optimum stress is a balance between excitement and relaxation that can help you to concentrate, focus and achieve what you want. The optimum stress helps you to become centered, clear and ready for action. The optimum stress releases your energy and helps you to become more effective in long term. The high stress results constant arousal, and anxiety causing the person's body to react with heart palpitations, continual sweating, stomach acidity, muscle spasms and high blood pressure. In long term high stress can cause irreparable

STUDY TO ASSES STRESS AMONG CARDIAC SURGICAL PATIENTS

damage to person’s physical and mental health and wellbeing [5].

Coping behavior is a person’s cognitive and behavioral effort to manage the internal and

external demands appraised as taxing or overwhelming. Coping is described as having two main components: (1) problem-focused coping, and (2) emotion-focused coping [6].

Table No. 1 CARDIAC SURGICAL PATIENTS BASED ON AGE, GENDER, HABITS, TYPE OF FOOD CONSUMING AND FAMILY HISTORY OF HEART DISEASE:

Sl. No	VARIABLES	PARTICULRS	FREQUENCY	MEAN
1	AGE (Mean 49)	(Class intervals)		
		21 – 30	4	1.33
		31 - 40	35	11.67
		41 – 50	76	25.33
		51 – 60	112	37.33
		61 and above	73	24.33
2	GENDER	Males	235	78.33
		Females	65	21.67
3	HABITS	Smoking	103	34.33
		Alcohol	61	20.33
		Smoking & Alcohol	52	17.33
		Tobacco chewing	80	26.67
		No Habits	104	34.67
4	FOOD	Vegetarian	124	41.33
		Mixed	176	58.67
5	Family History of Heart Disease	Yes	81	27.33
		No	219	73.00

Table No. 2 HABIT PATTERN AMONG CARDIAC SURGICAL PATIENTS

TYPE OF FOOD	Freq.	NO HABITS		SMOKING		ALCOHOL		ALCOHOL & SMOKING		TOBACCO	
		%		%		%		%		%	
VEG	124	49	16.3	46	15.3	11	3.67	17	5.67	32	10.67
MIXED	176	55	18.3	57	19.0	50	16.67	35	11.67	48	16.0
TOTAL	300	104	34.6	103	34.3	61	20.33	52	17.33	80	26.67

Figure No. 1

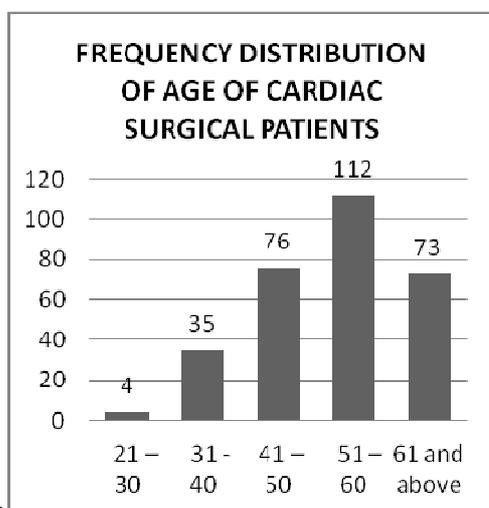
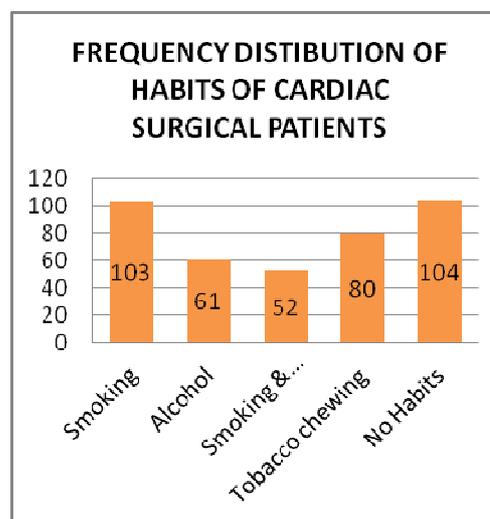


Figure No. .2



STUDY TO ASSES STRESS AMONG CARDIAC SURGICAL PATIENTS

Figure No. 3

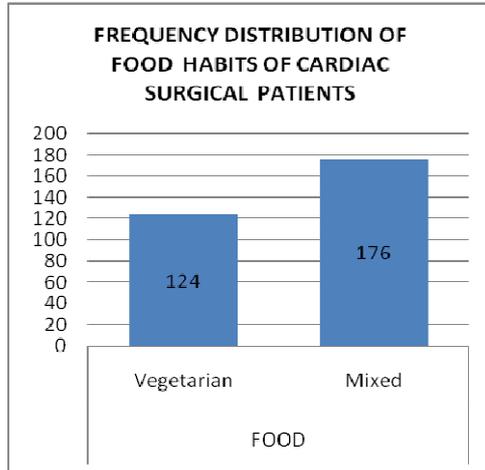


Figure No. 4

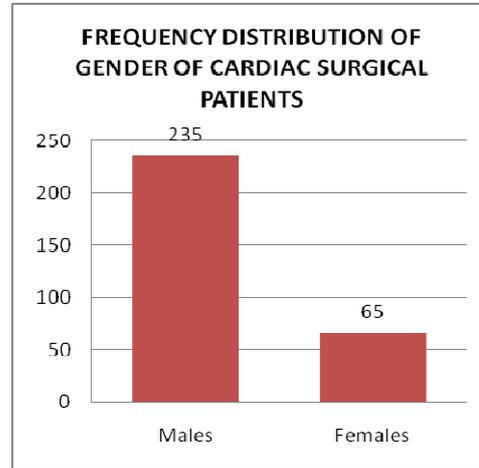


Table No. 3 MEAN SCORES AND SD OF STRESS BETWEEN PREOPERATIVE, AND FOLLOW UP PERIODS AMONG CARDIAC SURGICAL PATIENTS.

Sl.No.	STRESS	OPERATIVE		FOLLOW UP PERIOD	
	DIMENSIONS	Mean	S.D.	Mean	S.D.
1	Somatic symptoms	49.79	11.72	49.50	8.041
2	Stress resilience	49.50	6.89	50.85	14.52
3	Psychological symptoms	51.12	12.71	49.50	8.041
	OVERALL	50.15	10.28	49.67	11.2

N = 300

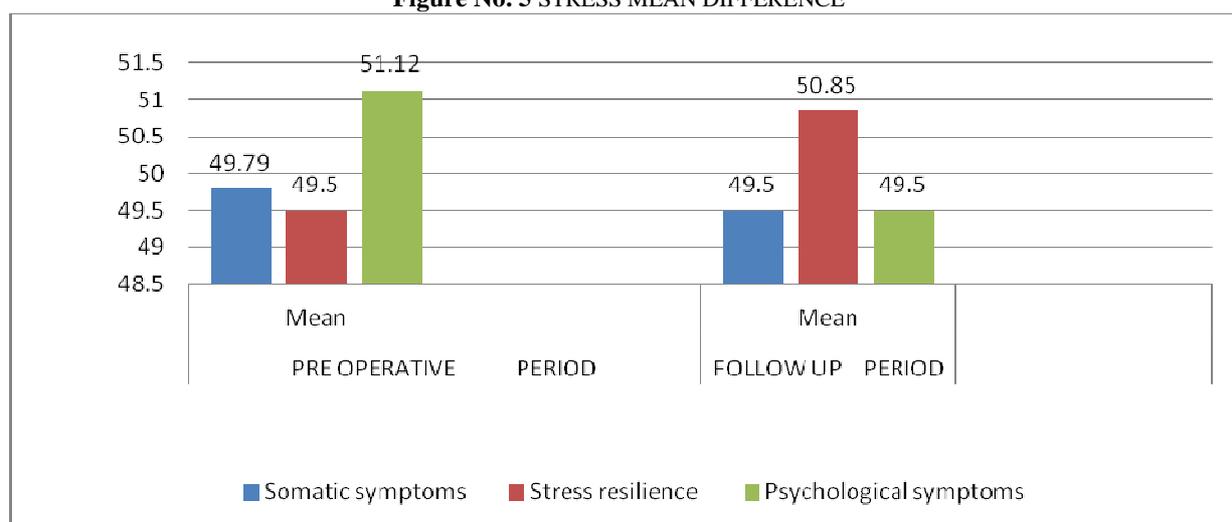
Table No. 4 FREQUENCY DISTRIBUTION OF SOMATIC SYMPTOMS AMONG CARDIAC SURGICAL PATIENTS DURING PREOPERATIVE AND FOLLOW UP PERIODS

RANGE	PREOPERATIVE FREQUENCY	RANGE	FOLLOW UP FREQUENCY
0 - 3.5	2	0 - 6	25
3.5 - 7	8	6 - 12	57
7 - 10.5	38	12 - 18	31
10.5 - 14	17	18 - 24	30
14 - 17.5	31	24 - 30	42
17.5 - 21	13	30 - 36	42
21 - 24.5	31	36 - 42	33
24.5 - 28	39	42 - 48	28
28 - 31.5	41	48 - 54	3
31.5 - 35	37	54 - 60	3

STUDY TO ASSES STRESS AMONG CARDIAC SURGICAL PATIENTS

35 - 38.5	26	60 – 66	3
38.5 – 42	5	66 – 72	0
42 - 45.5	8	72 – 78	0
45.5 – 49	4	78 – 84	1
		84 – 90	2
	300		300

Figure No. 5 STRESS MEAN DIFFERENCE



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