A STUDY TO ASSESS THE LEVELS OF STRESS AND COPING STRATEGIES AMONG CARDIAC SURGICAL PATIENTS

SYNOPSIS

SYNOPSIS OF THE THESIS SUBMITTED TO THE KARNATAK UNIVERSITY, DHARWAD FOR THE AWARD OF THE DEGREE OF Doctor of Philosophy IN PSYCHOLOGY

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INTRODUCTION:

The present study has been conducted with a main objective of, to assess the levels of stress and coping strategies among the cardiac surgical patients. Usually stress is more among patients who are subjected for surgery, but when a patient is posted for surgery on heart then the stress will be in higher state. The researcher felt to study the level of stress in-depth and recommend implementing the counseling programme so that the patients who have posted for cardiac surgery will reduce the complications which are mediated through the stress. Therefore the present research investigates the effect of cardiac surgery on stress, anxiety, coping strategies and quality of life among cardiac surgical patients.

Stress is an experience which always arises when an individual finds it difficult to cope with the changes or challenges that arises out of his/her environmental events. Environmental events which cause or produce stress are known as stressors. These may be physical, psychological, social, political, economic and organizational etc. Every individual requires optimum amount of stress to set the goal.

The word stress has been derived from the Latin word Strictus meaning hardship, adversity or affliction. It later evolved in Middle English as Stresse an old French as estresse. It has been used in physical sciences, medical sciences, psychology and behavioral sciences. Stress has been defined in three perspectives, namely environmental or external to body, as a mental state of tension or internal, and body’s own physical reaction. (Pestonjee 1991). Hans Selye (1976) defined stress as a non specific response of the body to any demand made upon it. He found that the same arousal response could be evoked by different situations.
Stress occurs in two common forms, personal stress, and work related stress. In our personal lives we deal with issues related to personal relationships, family life, our health, our home maintenance, managing our time and our financial well being. Any of these areas create significant increase in our stress level. However we cope with our rising stress levels.

The optimum stress is a balance between excitement and relaxation that can help to concentrate, focus and to achieve set the goal. The optimum stress helps to become centered, clear and ready for action. The optimum stress releases energy and helps 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 damage to person’s physical and mental health and wellbeing.

The stress is defined as a perturbation of the body’s homeostasis, as per medical parlance. This demand on the body-mind energy occurs when it tries to cope with incessant changes in life.

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, (Lazarus and Folkman, 1984),

Coping has also a temporary aspect. One can cope before a stressful event takes place, while it is happening, or afterwards. There are five situations that create a particular temporal context: (a) Preventive coping, (b) Anticipatory coping, (c)
Dynamic coping. (d) Reactive coping, and (e) Residual coping. (Hanoch Livneh (1999). Klauer and Filipp (1993) also identified with five coping strategies normally: (a) Seeking social integration, (b) Rumination, (c) Threat minimization, (d) Turning to religion, and (e) Seeking information.

When a person is in constant high stress, this brings stimulation to sympathetic nervous system; this in turn stimulates releasing of adreno corticotrophic hormone (ACTH), cortisol, adrenaline and noradrenaline. These hormones bring vasoconstriction and releasing of glucose to meet the forth coming fight or flight. This causes all the muscles to become stiff filled with energy. General vasoconstriction raises the blood pressure. This vasoconstriction also causes coronary vasoconstriction; in such condition, cardiac muscles do not get sufficient blood supply. During vasoconstriction time coronary vessels go in to spasms. This condition is called Ischemic Heart Disease or Angina Pectoris. Myocardial infarction (heart attack) is the irreversible damage of myocardial tissue caused by prolonged ischemia and hypoxia. Most commonly occurs when a coronary artery becomes occluded, due to formation of a blood clot (coronary thrombosis). This event can also trigger coronary vasospasm. If a vessel becomes completely occluded, the myocardium normally supplied by that vessel will become ischemic and hypoxic. The tissue dies without sufficient oxygen. The hypoxic tissue within the border zone may become a site for generating arrhythmias. Collateral blood flow is an important determinant of infarct size and whether or not the border zone becomes irreversibly damaged. Infracted tissue does not contribute to tension generation during systole, and therefore can alter ventricular systolic and diastolic function that disrupts electrical activity within the heart. (Phipps W and Long B. 1991).
The open heart surgery is a surgery, where the chest is opened and surgery is performed on the heart muscle, valves, arteries, or other heart structures (such as the aorta). The term "open" means that the chest is "cut" open. A heart-lung machine (also called cardiopulmonary bypass) is usually used during open heart surgery. While the surgeon works on the heart, the machine helps to provide oxygen-rich blood to the brain and other vital organs.

The cardiovascular surgery is a surgery on the heart and/or great vessels performed by cardiac surgeons. Frequently, it is done to treat complications of ischemic heart disease (for example, coronary artery bypass grafting), correct congenital heart disease, or treat valvular heart disease caused by various causes including endocarditis. It also includes heart transplantation. Heart surgery is done to correct problems with the heart.

The cardiac surgery brings high pressure on the mind, which increases anxiety in the person and gradually looses the quality of life. When a person has heart problem and requires surgery on the heart this situation brings more stress in an individual. In such situation person uses various coping strategies to combat stress. It brings his quality of life in low level. It is essential to determine the stressors and coping strategies or patterns used by the cardiac surgical patients.

Impending surgery on the heart is a stressful event that triggers specific emotional, cognitive physiological responses of patients. The amount of stress experienced is usually measured by stress, psychological symptoms, stress resilience, anxiety, state anger, type of personality, and quality of life reported by the patients. Several studies have shown increased stress and anxiety scores in presurgical patients.
Many researchers have studied about the stress and the coping strategies among the various patients that reveal many of the coping strategies and existing problems or the adaptation problems to them in regard to diseases. As the cardiac surgery is one of the major surgical interventions for the patients with cardiac problems and the interpretation of the studies suggest the need for the inclusion of the cardiac surgical patients in the present study.

**The Problem:**

A study to assess the levels of stress and coping strategies among cardiac surgical patients.

**Main Research Issues**

Following are the main research issues, which are studied in the present research

1. Do the cardiac surgical patients differ significantly in their stress symptoms during preoperative and follow up periods?

2. Do the cardiac surgical patients differ significantly in their anxiety during preoperative and follow up periods?

3. Do the cardiac surgical patients differ significantly in their coping strategies during preoperative and follow up periods?

4. Do the cardiac surgical patients differ significantly in their quality of life during preoperative and follow up periods?

5. Is there correlation among the type of personality with stress, anxiety, coping strategies and quality of life?

6. Is there association between stress with anxiety, coping strategies, and quality of life during preoperative period?
7. Is there association between anxiety with coping strategies and quality of life during preoperative period?

8. Is there association between coping strategies with quality of life during preoperative period?

9. Is there association between stress with anxiety, coping strategies, and quality of life during follow up period?

10. Is there association between anxiety with coping strategies and quality of life during follow up period?

11. Is there association between coping strategies with quality of life during follow up period?

**Hypotheses**

On observing the above mentioned issues, the following Hypotheses are formulated and verified in the present research.

**Ha$_1$.** Cardiac surgical patients differ significantly in their stress symptoms during preoperative period and the follow up period.

**Ha$_2$.** Cardiac surgical patients differ significantly in their anxiety during preoperative period and the follow up period.

**Ha$_3$.** Cardiac surgical patients differ significantly in their coping strategies during preoperative period and the follow up period.

**Ha$_4$.** Cardiac surgical patients differ significantly in their quality of life during preoperative period and the follow up period.
**H₅**. There is significant correlation between personality type A/B with the stress symptoms, anxiety, coping strategies and quality of life among cardiac surgical patients during preoperative period.

**H₅.₁**. There is significant correlation between personality type A/B and the stress symptoms among cardiac surgical patients.

**H₅.₂**. There is significant correlation between personality type A/B and the anxiety among cardiac surgical patients.

**H₅.₃**. There is significant correlation between personality type A/B and coping strategies among cardiac surgical patients.

**H₅.₄**. There is significant correlation between personality type A/B and the quality of life among cardiac surgical patients.

**H₆**. There is significant association among stress, anxiety, coping strategies and quality of life among cardiac surgical patients during preoperative period.

**H₆.₀₁**. There is significant association between stress and anxiety among cardiac surgical patients during preoperative period.

**H₆.₀₂**. There is significant association between stress and coping strategies among cardiac surgical patients during preoperative period.

**H₆.₀₃**. There is significant association between stress and quality of life among cardiac surgical patients during preoperative period.

**H₆.₀₄**. There is significant association between anxiety and coping strategies among cardiac surgical patients during preoperative period.
Ha6.05. There is significant association between anxiety and quality of life among cardiac surgical patients during preoperative period.

Ha6.06. There is significant association between coping strategies with quality of life among cardiac surgical patients during preoperative period.

Ha7. There is significant association among stress, anxiety, coping strategies and quality of life, among cardiac surgical patients during follow up period.

Ha7.01. There is significant association between stress and anxiety among cardiac surgical patients during follow up period.

Ha7.02. There is significant association between stress and coping strategies among cardiac surgical patients during follow up period.

Ha7.03. There is significant association between stress and quality of life among cardiac surgical patients during follow up period.

Ha7.04. There is significant association between anxiety and coping strategies among cardiac surgical patients during follow up period.

Ha7.05. There is significant association between anxiety and quality of life among cardiac surgical patients during follow up period.

Ha7.06. There is significant association between coping strategies with quality of life among cardiac surgical patients during follow up period.

Tools Used:

Following 10 tools were used in this study.

1. Personal Information
2. Kindler’s Personal Stress Assessment Inventory, Somatic Symptoms (1981)
10. W.H.O-BREF, Quality of Life Scale

**Pilot study**

The present study was conducted with the permission of the heads of the KLE Dr. Prabhakar Kore Hospital and Medical Research Centre, Belgaum. 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 the sample groups, before the final administration of the scales on the main sample of the study. This study has included 100 subjects preoperatively, and follow up periods. Approximately cardiac surgical patients have taken 60 to 75 minute to complete the tools. The obtained result of the pilot study inspired the researcher to continue the study further, eventually studied 300 cardiac surgical patients.

**Sample**

The present research has investigated 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, these are, preoperative patients, they have to undergo cardiac surgery and the same patients have taken after surgery, who have come back after a month for the follow-up treatment to the cardiac OPD at KLES Dr. Prabhakar Kore Hospital and Medical Research Centre, Belgaum, Karnataka State, India.

The purposive sampling technique was adopted in this study. The sample size considered for the present study is 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).

Method

The investigator obtained ethical clearance and formal permission from the Medical Director and Chief Executive, Administrator, Clinical Services, and also permission from Director, Heart foundation KLE Dr. Prabhakar Kore Hospital and Medical Research Centre, Belgaum, to collect data for this main study. The data was collected continuously for duration of two years. The investigator introduced him-self and explained the purpose of the study to the cardiac surgical patients. The informed oral consent was obtained from each cardiac surgical patient. The investigator requested the patients to mark on the items, as it is applicable to them. The data included assessment of stress, the coping strategies and the quality of life. It took 60 to 75 minutes to collect the data from each cardiac surgical patient. The data was collected from the cardiac surgical patients during the preoperative period i.e. a day before cardiac surgery was performed and also collected data after four weeks of the operation as a follow up study on the same cardiac patients.
Statistical Analysis

Raw scores are converted into standard scores for all the tests before applying statistical techniques.

1. **Student’s t-test**: this method has been used to find the significance of difference between means of two groups’ i.e. preoperative cardiac surgical patients group and the follow up cardiac surgical patients group in all the relevant dimensions.

2. **Correlation**: Karl Pearson’s coefficient of correlation has been used to compute the linear relationship between any two groups. Here the coefficient of correlation has been applied to observe the relationship between personality and stress, anxiety, coping strategies and quality of life parameters.

3. **Chi-Square Test**: A non parametric test of statistical significance used to assess whether a relationship exist between two nominal-level variables; symbolized as $\chi^2$. This method has been applied to assess the relationship between stress and anxiety, between stress and coping strategies, between stress and quality of life, between coping strategies and quality of life etc.

4. **Descriptive Statistics**: This method has been used to describe and summarize the data, namely frequency distribution, percentages and graphical figures are used to present the results. All the subjects of each domain among preoperative period and the follow up period are presented in this study.

**Results and conclusions**

The somatic symptoms, which were higher during preoperative period and have reduced during, follow up period. This reveals that most of the somatic symptoms are
reduced as operation has brought relief of those somatic symptoms among 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, 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.

The psychological symptoms were more during preoperative period due to fear of unknown prognosis and during follow up period those symptoms have reduced. They also look happy and their day today performances were better than preoperative period.

The cardiac surgical patients’ pent up anxiety has reduced from preoperative period to follow up period as operation has brought success thereby reduced the anxiety and patients have adjusted very well with the environment. It is found that stress is statistically significant and highly correlated to anxiety. As stress increases anxiety also increases.

The state anger during preoperative period which was less than the follow up period and has risen during follow up period. It is due to adjustment problems in hospital and home, due to restricted movements and adjusting to a new life style.

The patients were using coping strategies to deviate from the heart problems like pain, fear of unknown, fear of new environment etc. But during follow up period there is reduction in using these measures. They do not need to create any measures to solve the problem, neither to think positive nor negative way or blaming anybody for
their problems as well as expecting social support. Statistically it is also significant that coping strategies are highly correlated to stress. As stress increases cardiac surgical patients use more coping strategies to reduce the stress.

It is interesting to note that all the dimensions of Quality of Life (QOL) have scored high during follow up period in comparing with preoperative period. All the dimensions like perception of QOL, satisfaction with health, physical domain, psychological domain, social relation domain and environment domain have scored less during preoperative period and during follow up period all those dimensions scored high. This shows that, the quality of life was low during preoperative period due to cardiac disease, and corrected during operation, and after operation, there is more improvement in QOL during follow up period among cardiac surgical patients. This shows that cardiac surgical patients have improved their quality of life after operation.

Overall observation of all the tables like mean tables of all dimensions, comparison tables of various dimensions of stress, anxiety, coping strategies 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.
Implications:

On observing the stress, anxiety and more using of coping strategies among the cardiac surgical patients, which were more during preoperative period and less during follow up period. Therefore the health personnel (doctors and nurses) should counsel the patients before cardiac surgery. Doctors and nurses should prepare the patients preoperatively, in such a way that, there should be no stress and anxiety and patients should come happily for the cardiac operation. Patients need human touch and care. Therefore health personnel should establish a preoperative counseling cell for cardiac patients. This kind of implications definitely brings good results among patients.

REFERENCES:


