CHAPTER V

SUMMARY AND CONCLUSION

Statement of the Problem
Objectives
Hypotheses
Methodology
Statistical Analysis of the Data
Findings
Implications
Limitations
Suggestions for Further Research

Prepared by BeeHive Digital Concepts Cochin for Mahatma Gandhi University Kottayam
SUMMARY AND CONCLUSION

Anxiety and stress are part and parcel of modern mechanized life. They occur as a response to a threat to the human body or mind. Certain situations in life precipitate stress and anxiety such as serious diseases or deformity of the body due to accidents, surgery and hospitalization. The perception of stress and anxiety differ from person to person though the cause is the same. Some people cope with stressful situations positively where as others find it difficult to adjust with them stress and anxiety are experienced by all hospitalized patients, irrespective of age, sex and disease conditions. It is aggravated if a patient is to undergo an elective major surgery on vital organs such as heart or brain. The emotional disturbances in a normal person, such as stress, anxiety or depression, interfere with the normal functioning of the cardiovascular system. This may lead to failure of heart as a pump, resulting in fatal consequences. The condition becomes more complicated and serious in a cardiac surgical patient with structurally defective heart. In a defective heart the emotional disturbances could cause fatal consequences, costing the life of the cardiac surgical patient. Incidences of death have been reported from the clinical field as a result of serious emotional disturbances even before undergoing cardiac surgery. Serious post-operative complications of heart, lungs and nervous system
are also reported after cardiac surgery, inspite of the routine pre-operative preparations in the hospital. These complications may lead to a vegetative life. Hence there is a need to assure the patients of an uneventful post-operative recovery from major cardiac surgical procedures, by preventing serious life-threatening complications. This can be done by timely assessment of stress and anxiety and also by taking appropriate psychological interventions. Although the need for management of psychological disturbances has been stressed by several researchers, their findings have been pushed into the periphery of illness management. Not much has been done in the existing clinical system to manage the stress and anxiety of patients. Medical system has in fact failed to provide even the necessary information regarding the disease, to patients.

Hence the researcher has made an attempt to develop a Stress Management Programme for the cardiac surgical patients and to test its effectiveness in managing stress and anxiety and in reducing post-operative complications among the patients.

The problem of the study was stated as follows:

**Statement of the Problem**

"The Effectiveness of Stress Management programme on Cardiac Surgical patients"

The following objectives were formulated for the study.
Objectives of the Study

1) To find out the stress experienced by cardiac surgical patients before and after cardiac surgery.

2) To find out the state anxiety experienced by cardiac surgical patients before and after cardiac surgery.

3) To find out the trait anxiety experienced by cardiac surgical patients before and after cardiac surgery.

4) To find out the post-operative complications developed in the cardiac surgical patients.

5) To develop a stress management programme (SMP) for the cardiac surgical patients.

6) To find out the effectiveness of SMP on the cardiac surgical patients.

Based on the experience of the investigator, literature reviewed and objectives stated above, the following hypotheses were formulated for the study.

Hypotheses

H.1. There will be significant difference between the pre operative stress and post-operative stress in the experimental group.
H.2. There will be significant difference between the pre operative state anxiety and post-operative state anxiety in the experimental group.

H.3. There will be significant difference between the pre operative trait anxiety and post-operative trait anxiety in the experimental group.

H.4. There will be significant difference between the experimental group and control group in the post-operative stress.

H.5. There will be significant difference between the experimental group and control group in the post-operative state anxiety.

H.6. There will be significant difference between the experimental group and control group in the post-operative trait anxiety.

H.7. There will be significant difference between the experimental group and control group in the occurrence of post-operative complications.

**Methodology**

1. The experimental design, Pretest-Posttest-Control-Design, was used for the present study.
Sample:

The study was conducted on 100 patients undergoing cardiac surgery in the Govt. Medical Colleges of Kottayam and Trivandrum.

The sample was selected as per the criteria described below. Male and female patients undergoing elective major surgery on heart, not having any other debilitating diseases such as Diabetes mellitus, Hypertension, Tuberculosis, Renal failure and Liver failure of Cancer, were selected as sample for the study. The age ranged between 18 to 60 years.

Tools:

1. Malayalam version of stress check list. (developed by the investigator, 1996).

2. Malayalam version of State Trait Anxiety Inventory. (Developed by Spilberger and Translated and standardized by Mohan Das and Kumar, 1994).

3. Post-operative complication Check list (developed by the investigator, 1996).

The stress management programme consisted of guided Somatopsychic relaxation (GSPR) technique developed by Sreedhar (1996) and two types of deep breathing exercises—diaphragmatic breathing exercises and pursed lip breathing exercises. SMP also included information module consisting of information about cardiac surgery and its management and ways to adjust with the management.

**Procedures:**

A pilot study was conducted on 30 patients selected from Medical College Kottayam, using the same inclusion criteria mentioned earlier, after chart review. These patients were divided into two groups of 15 each, the experimental group and the control group. Cardiac patients from both the groups were pre-tested for stress, state anxiety and trait anxiety using SCL and STAI respectively. The experimental group was given training in stress management programme for a week prior to cardiac surgery along with routine hospital pre operative preparations. The control group was given only routine hospital pre operative preparation. Patients of both groups were tested for stress, state anxiety and trait anxiety using SCL and STAI on the seventh post-operative day. The post-operative complications were assessed by post-operative complication check list. Based on the results of the pilot study, the following conclusion were drawn.
The stress checklist, STAI and post-operative checklist were found adequate for the present study.

The SMP was found simple, feasible and appropriate for the present study.

The most appropriate time for data collection was between 2 p.m and 6 p.m on all days. The dressing room was found to be useful to provide SMP to patients.

The heart rate, respiratory rate, blood pressure and pulse rate were found to be reduced considerably after relaxation process, indicating a complete relaxation of mind and body.

The cardiac surgical patients welcomed the new SMP training as a novel experience, and they co-operated whole heartedly in the pilot study. The language of SMP was simple and clear as reported by the patients of the experimental group. The patients reported that the instructions of SCL, STAI and SMP were well understood and were easy to follow. Hence no changes were made in the tools or technique of data collection, as they were found adequate, feasible and appropriate for the final study. Patients selected for pilot study were excluded from the final study.
Final Study:

Written permission was obtained from the authorities of the selected hospitals for conducting the study. Hundred patients undergoing elective major surgery on the heart were selected as per the criteria mentioned earlier and after chart review. Consent was taken from each patient to participate in the final study after explaining the details of the study. After testing the stress and anxiety of these patients using SCL and STAI respectively they were divided into groups of 50 patients each—the experimental group and control group. The patients belonging to the control group received only routine hospital pre-operative preparations. The experimental group was given SMP training for a week prior to surgery in addition to the routine pre-operative preparations. On the seventh post-operative day after cardiac surgery, both the groups were tested for stress and anxiety. Post-operative complications among these patients were assessed by POCCL. The average time taken to work on a single patient was 1-2 months and the data collection lasted for 4 years.

Statistical Analysis of the Data

The data was analysed using paired ‘t’ test and ‘t’ test. The following results were obtained.
Results:

1. There was significant difference between pre-operative stress and post-operative stress in the experimental group.

2. There was significant difference between pre-operative state anxiety and post-operative state anxiety in the experimental group.

3. There was significant difference between pre-operative trait anxiety and post-operative trait anxiety in the experimental group.

4. There was significant difference in post-operative stress between the experimental and control groups.

5. There was significant difference in post-operative state anxiety between the experimental and control groups.

6. There was significant difference in post-operative trait anxiety between the experimental and control groups.

7. There was significant difference in the occurrence of post-operative complications between the experimental and control groups.

8. The SMP was found to be effective in reducing stress experienced by the patients undergoing major cardiac surgery.
9. The SMP was found to be effective in reducing state anxiety and trait anxiety of the patients undergoing major cardiac surgery.

10. The SMP was found to be effective in reducing post-operative complications of the patients undergoing major cardiac surgery.

Findings of the Study

1. The stress experienced by cardiac surgical patients after surgery was found to be lower than the stress experienced by them before the surgery.

2. The state anxiety experienced by cardiac surgical patients after surgery was found to be lower than the state anxiety experienced by them before surgery.

3. The trait anxiety experienced by the cardiac surgical patients after surgery was found to be lower than the trait anxiety experienced by them before surgery.

4. The stress experienced after cardiac surgery by the experimental group (who was given SMP) was found to be lower than that of the control group.
5. The state anxiety experienced after cardiac surgery by the cardiac surgical patients who received SMP was found to be lower than that of those who did not receive the SMP.

6. The trait anxiety experienced after cardiac surgery by the cardiac surgical patients who received SMP was found to be lower than that of those who did not receive the SMP.

7. The occurrence of post-operative complications in the experimental group was found to be significantly lower than that in the control group.

8. The SMP was found to be effective in reducing pre-operative stress and anxiety among the patients undergoing elective major cardiac surgical procedures.

9. The SMP was found to be effective in reducing the complications following major cardiac surgeries.

Implications of the Study

The aim of the study was to develop a stress management programme for the cardiac surgical patients and to find out its effectiveness in reducing stress and anxiety and in promoting uneventful recovery. Cardiac surgery precipitate stress and anxiety in patients which have a fatal effect on their diseased heart. The professional care givers no doubt are actively engaged
in meeting the physiological as well as physical needs of the cardiac surgical patients in the intensive care units. Though the physiological and physical homeostasis are maintained by pharmacological agents, the psychological needs and problems are generally neglected. Majority of the cardiac surgical patients undergoing cardiac surgery without any psychological support suffer from increased strain and consequently develop fatal complications following cardiac surgery.

The cardiac surgical patients, their relatives, and professional care givers remain embarrassed, helpless and ignorant to solve the problems related to stress and anxiety associated with cardiac surgical interventions. Yet no attempt was made so far in our present clinical set up to address these problems.

The stress management programme developed by the investigator consist of information regarding various aspects of cardiac surgery, Guided Somato Psychic Relaxation techniques and two types of breathing exercises. Each component had its own effect on the cardiac surgical patients to adjust to the stressful situations before, during and after cardiac surgery. The information module consist of detailed description of pre-operative procedures, instructions while transferring patients to the operation theatre, and information regarding post-operative
management. The unknown routine hospital procedures are taught to the patients using information module. The information module help the patient to face the cardiac surgery with courage and self-confidence. The information module reduces fear for the unknown encouraging whole hearted co-operation and compliance with the pre-operative hospital procedures.

Guided somato psychic relaxation is taught to the patient prior to cardiac surgery which helps the patient to relax his body muscles which in turn provide more blood supply. The wound healing is hastened due to increased supply of oxygen and nutrients to the mutilated tissues of chest and internal organs. This results in an uneventful recovery following serious cardiac surgical interventions.

By practicing deep breathing exercises the patient learns to take slow, steady deep breaths with minimal chest movements which reduces pain during breathing and helps to bring out secretions accumulated in the lungs following cardiac surgery. Deep breathing exercise refreshes and relaxes the patients due to increased oxygen absorption which help in wound healing and preventing respiratory infection which are common following cardiac surgery.
The newly designed stress management programme is found to be effective in preventing complications following cardiac surgery and the patient is ensured with an uneventful recovery following cardiac surgery.

The tools of the study, the stress check list, state trait anxiety inventory and post-operative complications checklist could be used for similar clinical studies in future.

The findings of the present study are helpful in guiding the professional care givers in managing stress and anxiety in the clinical set up and reveal ways and means to prevent post-operative complications.

The patients who had undergone stress management programme could use these techniques even after discharge from the hospital to deal with stress and anxiety of daily life. Thus the stress management package programme is found to be effective in preventing serious complications following cardiac surgery.

Limitations of the Study

- Since the occurrence of valvular diseases of the heart is more common among females, the number of male patients selected for the study was less than that of the female patients.
The present study was confined to two medical colleges of
Kerala state, selected at random due to time constraint.

The present study excluded patients undergoing coronary
artery bypass surgery since none of these patients fulfilled
the criteria set for sample selection.

**Suggestions for Further Research**

- Similar studies may be conducted on patients undergoing
cardiac surgery for congenital defects of the heart and who
fall below 18 years of age.

- Similar studies may be conducted on all patients undergoing
general surgery under General Anesthesia, with appropriate
modification of the information module of SMP.

- Similar studies may be conducted on patients undergoing
coronary artery bypass surgery.

- Similar studies may be conducted on chest surgery patients,
using the same tools.

- The effectiveness of breathing exercises on chest surgery
may be studied on a group of patients undergoing thoracic
surgery.
The effectiveness of GSPR in reducing pre-operative anxiety may be tested on patients undergoing elective major surgery under General Anesthesia.