CHAPTER – VI
MAJOR FINDINGS AND CONCLUSION

6.1 SUMMARY

Coronary Artery Bypass Graft Surgery has become the common surgical operation in the recent decade for restoring health and vigor to persons suffering from coronary artery disease. Preoperative anxiety is expected among patients as they may be consumed by fear of being uncertain, lack of control, pain or discomfort they experience and the tedium and distress of the recovery process. The transition from hospital to home provides significant challenges as patients confront unrealistic expectations that result in feelings of despair, frustration, fatigue, nightmares and sleeplessness. The research report of Westerdahl et al. (2003) revealed that preoperative anxiety is one of the predictive factor for patients undergoing CABG. It affects their perceived self confidence to make the necessary life style changes following CABG.

For this reason effective educational intervention is to be devised to prepare the patients for the surgery and to promote the quality of life. Therefore, recognizing these facts, the researcher intended to determine the effectiveness of comprehensive nursing strategies on the improvement of the psycho physiological status of the patient. The comprehensive nursing strategies is an effectively planned and carefully coordinated psycho educational intervention, which is expected to drive out the fear and encourage commitment to participate in life style modification (diet, medication, abdominal breathing, physical activity and walking program).
The researcher introduced the comprehensive nursing strategies, that included the delivery of laptop assisted preoperative instructions on lifestyle modification and relaxation exercise practice with pulseoxymetry feedback to augment mind body integration with appropriate enhancement of knowledge.

The research question formulated for this study was - what is the effect of comprehensive nursing strategies on state anxiety, quality of life and functional status among patients subjected to CABG?

The objectives of the study were to

1. Determine the effect of Comprehensive Nursing Strategies on state anxiety among patients subjected to CABG surgery.
2. Identify the effect of Comprehensive Nursing Strategies on quality of life among patients subjected to CABG surgery.
3. Evaluate the effect of Comprehensive Nursing Strategies on functional status among patients subjected to CABG surgery.
4. Associate the state anxiety, quality of life and functional status with selected demographic variables
The formulated study hypotheses were:

H1 : There is a significant difference in state anxiety among subjects who receive comprehensive nursing strategies than those who do not.

H2 : There is a significant difference in quality of life among subjects who receive comprehensive nursing strategies than those who do not.

H3 : There is a significant difference in Functional status among subjects who receive comprehensive nursing strategies than those who do not.

Related literature were reviewed and grouped. Conceptual framework for this study was based on modified Health Promotion Model of Nola J. Pender (1996).

The approach of the study was evaluative in nature. Randomized controlled trial design was used. Subjects were randomly allocated to either the study group or the control group by Block randomization. Estimated sample size was 400 with 200 subjects in each of the groups.

The male and female patients subjected to CABG for the first time on an elective basis who were in the age group of 30 to 70 years, willing to participate in the study and could understand either Tamil or English were included for the study. Patients who were with the history of previous cardiac surgery, with COPD and peripheral vascular disease, with post operative complications that made the ICU stay > two days were excluded.
The important outcome variables were state anxiety, quality of life and functional status. State anxiety was measured using Speilberger’s state trait anxiety inventory (STAI). Health-related quality of life was measured using the SF- 36V2, a generic, self-reported quality of life, General Health Survey and the functional status was measured using 6MWT.

A checklist was developed by the researcher to measure the practice level of abdominal breathing and gentle stretching exercises and to ensure that no step is left undone by the study group. The comprehensive nursing strategies daily log was prepared by the researcher in order to keep the patient mentally focused on adherence to lifestyle modification (LSM) during recovery period. The comprehensive nursing strategies daily log was reviewed by the researcher on the 30th and the 90th postoperative day.

Information booklet on healthy living after CABG surgery was prepared by the researcher. The contents of the booklet were similar to the information covered during teaching session. The booklet was divided into several short sections under the headings: Heart and coronary circulation, Coronary artery disease (CAD), CABG surgery, management scenarios, lifestyle modification and relaxation exercise on abdominal breathing.
Manipulation included the lap top assisted one to one interactive teaching for 30 minutes on admission and 2\textsuperscript{nd} pre operative day on Life Style Modification (LSM) as diet, physical activity, walking program, medication and relaxation exercise practice with pulseoxymetry feedback (REPPF). The study group were issued the booklet on healthy living after CABG surgery.

The REPPF and the gentle stretching exercises were taught and demonstrated to the study group followed by return demonstration for 30 minutes in which the patient saw the anxiety responses on the screen of pulseoxymeter prior to abdominal breathing, then performed the abdominal breathing and received the immediate feedback by means of desired heart rate and oxygen saturation.

The researcher supervised the gentle stretching exercise and the REPPF daily from 3\textsuperscript{rd} to 7\textsuperscript{th} postoperative day with an aim that the patient eventually learn to control anxiety on their own without the pulseoxymetry when they practice at home.

The reinforcement was given on 8\textsuperscript{th}, 15\textsuperscript{th}, 30\textsuperscript{th} and 90\textsuperscript{th} POD and the telephonic reinforcement on 60\textsuperscript{th} and 85\textsuperscript{th} POD for the study group. The researcher clarified individual patient’s doubts and motivated on regular adherence to lifestyle modification and relaxation exercises and regular
maintenance of comprehensive nursing strategies daily log. The researcher reviewed the regular maintenance of Comprehensive Nursing Strategies daily log on 30th and 90th postoperative day.

The control group had received the routine care like regular preoperative cum post operative consultations from the physician. The reminder regarding follow up visit was given on 8th, 15th and 30th POD. The telephonic reminders regarding follow up visit was given on 60th and 85th POD. The group was issued a booklet on healthy living after CABG surgery after the posttest III.

The pretest, posttest I, II and III on state anxiety, quality of life and functional status were conducted on the day of admission, 8th, 30th and 90th POD respectively among patients in the study and the control groups.

The data were analyzed using appropriate descriptive and inferential statistics. The results are discussed in light of the hypotheses.

6.2 STUDY FINDINGS

- The pretest mean score of state anxiety was 62.99 with SD 13.18 in the study group and 62.06 with 13.89 in the control group. The independent t test results revealed that there is no statistically significant difference in the mean score of state anxiety as shown by independent t value of 0.683 with p=0.495.
Moreover, the mean score (Table 9) of state anxiety was found to be significantly lesser in the study group than the control group during posttest I (51.59 Vs 55.41), at the level of p< 0.01, posttest II (46.24Vs 51.51), posttest III (38.61 Vs 47.30) at the level of p< 0.001. The RM ANOVA results of (table 10) further substantiate the ‘t’ test findings.

The comparison (table 17 & 18) of mean score of physical and mental health components of quality of life between the study and control groups revealed that there is no significant difference during pretest.

The results elucidates (table 17 & 18) a statistically significant improvement in the mean scores of physical and mental health components among the subjects in both groups during posttest I & II, whereas, the mean score of the study group was much more than the control group which confirmed the presence of statistically significant difference between the study and control groups during posttest I & II at p< 0.001. The results were substantiated by the repeated measures ANOVA (table 19 & table 20).

The pretest mean score of functional status in the study group was 126.60 and in the control group was 127.93. The independent t test results revealed that there was no statistically significant difference in the mean score of functional status between the study and the control groups as shown by independent t value of 0.05 with p=0.95 (table24).
- A statistically significant improvement in the mean scores of functional status during posttest II & III, among the subjects in both groups whereas, the mean score of the study group was much more than the control group (posttest II 244.41 Vs 213.97, posttest II 351.19 Vs 277.71). The mean differences were high and the calculated t values were 3.22 with p< 0.01 level during posttest II and 5.95 with p< 0.001 level during posttest III which confirmed the presence of a statistically significant difference between the study and control groups with relation to functional status (table 24).

- Table 28 shows that there was a significant association between the level of state anxiety and age, gender, education, occupation, diet pattern at p< 0.01, monthly income at p<0.05 among the study group.

- Table 29 shows that there was a significant association between the level of state anxiety and indications for CABG at p<0.001 among the study group.

- Table 30 shows that there was a significant association between the physical health summary of quality of life and occupation, monthly income among the study group in posttest II at p< 0.05.

- Table 31 shows that there was a significant association between the physical health summary of quality of life and co morbidity at p< 0.01 among the study group.
• Table 34 shows that there was a significant association between the functional status and age, educational status among the study group at p< 0.001.

• Table 35 shows that there was a significant association between the functional status and type of CABG, body mass index, physical activity at the level of p<0.001, indications for CABG among the study group at the level of p<0.05.

6.3 CONCLUSION

The study finding is supportive of the hypothesis 1 - i.e There is a significant difference in state anxiety among subjects who receive comprehensive nursing strategies than those who do not. The homogeneity was maintained between the groups during pretest. The difference in the post test comparison is due to the adherence to relaxation exercise on abdominal breathing relaxation exercise by the study group. Therefore, H1 is accepted.

The hypothesis second is - There is a significant difference in quality of life among subjects who receive comprehensive nursing strategies than those who do not. The homogeneity was maintained between the groups during pretest. There was a difference in the post test comparison. It could be due to the fact that the study group had successfully overcome the critical moments by adhering to physical activities, walking program, diet, medication and relaxation exercise. Since the empirical evidences support the hypothesis – 2, H2 is accepted.
The hypothesis three is - There is a significant difference in Functional status among subjects who receive comprehensive nursing strategies than those who do not. The homogeneity was maintained between the groups during pretest. There was a difference in the post test comparison. Post test mean functional status score of study group showed a considerable improvement than the control group. It could be due to the fact that as the days progress after surgery there was an improvement in the ability to undertake day-to-day activities and walking program at home by the study group. Therefore, H3 is accepted.

Based on the study findings it may be highlighted that the comprehensive nursing strategies is a multidimensional approach: it is an effective method to decrease the preoperative anxiety and thereby improve the quality of life and functional status in the post operative period.

6.4 RECOMMENDATIONS

1. Explorative study can be done to better understand how preoperative expectations influence CABG surgery, recovery and also helps to understand better how expectations change over time.

2. Phenomenology study can be done to find out the barriers for adherence to cardiac rehabilitation and find out the factors to overcome those barriers for adherence.

3. Long term follow up study could be done for sustaining the benefits.
4. The combination of biophysiological parameters and other psychosocial interventions can be investigated

5. Qualitative and lived in experience among patients subjected to CABG can be researched to have a better understanding of the problem.

6. The study can also be replicated in different cultural groups, urban areas and in larger samples in different settings.

7. A multi center study may be carried out applying the same interventions.

8. Relaxation and video assisted teaching may be applied to women subjected to CABG and can be tested for the efficacy in women population.

9. Comparative study can be done among various types of cardiac surgery

6.5 IMPLICATIONS TO NURSING PRACTICE:

Most patients have some type of emotional reaction before any surgical procedure. Preoperative anxiety may be an anticipatory response to an experience viewed by the patient as a threat to the outcome of CABG and recovery after CABG. Psychological distress directly influences body functioning. Therefore, it is imperative for the nurse to identify anxiety and alleviate concerns.
Comprehensive nursing strategies, a multidimensional approach was effective in reducing emotional distress and enhancing physical functioning. This is a low-cost and effective nursing strategy developed with the aim to maximize comprehension with minimal professional staff time. The nurse can implement the booklet on lifestyle modification and relaxation exercise which consumes 20 min during preoperative routine assessment.

Positive reinforcement brings changes in behavior. Indeed, it is feasible for patients to develop mastery in the relaxation quickly. Similar booklet that orients the patient about surgery and home care management enhances patient knowledge and self care capabilities. It can therefore improve their satisfaction.

The nurse can utilize the intranet e-learning facility and plan for group teaching sessions for patients to reinforce learning during postoperative period. It is crucial for nurses to understand the importance of including families in the education process. Nurses could involve family members to enhance their knowledge on treatment adherence and its important contribution to improve the quality of life.
NURSING EDUCATION

Nursing care of CABG patients is a clinical challenge for nursing students during the clinical training experience. Effective preclinical lecture on pre operative education with demonstration and supervised return demonstration of relaxation exercise will inspire confidence and ensure better patient care and outcomes. The booklet can be used as a teaching material for easy administration during clinical postings.

As advances in technology shape education in all disciplines, e-learning is beneficial in enhancing nursing skills in nursing students. Booklet information can be used by students through Intranet e-learning facility in the care of cardiac patients during clinical practice.

The booklet can be used as one of the teaching materials in post certificate diploma course on cardiothoracic nursing.

Incorporating comprehensive nursing strategies into nursing curriculum would benefit the nursing students. Six minutes walk test is one of the important objective measurements of functional capacity of patients subjected to CABG surgery. Integration of 6 minute walk test into the nursing curricula would benefit the nursing students themselves. They in turn could apply it in the clinical practice for the benefit of the patients.
NURSING ADMINISTRATION

Preoperative and postoperative screening tool for anxiety would identify high risk patients. The STAI Scale is a short tool that can be used quickly and effectively to measure separately the state anxiety and trait anxiety. This tool could be used to assess patients preoperatively and could be used again within the first several days after surgery.

The nurse administrators can formulate in service education unit pertaining to anxiety reduction among patients subjected to CABG surgery. This specific unit can be given training on anxiety reduction techniques through continuing nursing education programme.

The trained anxiety reduction unit can organize regular in-service training on pre-operative education for cardiac surgery patients for intensive care nurses to maintain high standard.

Training sessions should be held when intensive care nurses are on duty or on-duty time should be allocated for these sessions. Attendance should be compulsory. Periodical assessment of knowledge on comprehensive nursing strategies among nurses is important to ensure the quality nursing care.
Nurse administrators can organize educational programs such as short term course, refresher course, seminar, workshop and conferences in collaboration with Members of the multidisciplinary team to update the nurses in order to ensure effective patient care.

Orientation can be done for nurses about e-learning availability of booklet information for effective utilization. Periodical assessment of interaction between improved patient’s satisfaction and cardiac nurse’s job satisfaction could be explored. Intuitively, satisfaction within one or both groups is likely to engender and reinforce satisfaction in the other.

NURSING RESEARCH:

Research seeks to provide definite answers to important questions, which can inform clinical practice, enabling evidence based patient care.

Dissemination of research findings is prerequisite for implementation of research findings in nursing practice that yield significant health benefits to all populations and across all health care settings. The use of Journal club, research seminars and research workshops are some of the enabling process in order to increase the dissemination of knowledge.

Nurse researchers can enroll themselves in nursing Ph.D society and organize conferences to communicate research findings either in oral form or in written form.