CHAPTER – VI

MAJOR FINDINGS AND CONCLUSION

6.1 SUMMARY

Coronary Artery Disease is the leading cause of mortality and morbidity in India and around the globe. The overall prevalence rate of CAD in India has increased phenomenally in the last two decades (Krishnaswami, 2002; Mohan, et al, 2001). Number of CABGs performed every year in India has also increased. CABG relieves symptoms of myocardial ischemia effectively. In selected subsets of CAD patients such as those with triple vessel disease and mild or moderate LV dysfunction it enhances the survival rates (Pradeep, et al 2003). However the patients subjected to CABG experience high level of anxiety (Parent & Fortin, 2000; Ku. Ku & Ma, 2002). Pre operative anxiety was the most important factor that influences the post operative quality of life (Tung, Hunter & Wei, 2005). Study on rehabilitation following CABG primarily focused on vocational functioning. Other components of rehabilitation such as emotional functioning, return to family and household responsibilities, and social and leisure activities have received less attention in the reported research (O’Conner 1983). Hence the development and testing of intervention which will promote optimal emotional, social and physical functioning become need of the hour.

Realizing this fact the investigator instituted the combination of yoga relaxation and video assisted information to enhance mind body integration with appropriate cognitive reorientation. The yoga relaxation technique works on the basis of optimizing mind body harmony. The research report (O’Conner, 1983) revealed that fear of injury is one of the predictive factor for patients poor participation in activities. The video developed for this study is expected to dispel their fear and instill
confidence to participate in ADL, physical exercises, social, spiritual and leisure time activities.

The research question that guided this investigation on stress reeducation strategies is - what is the effect of Video assisted information and yoga relaxation techniques on Anxiety, Self-efficacy and activity level during immediate post operative period and 6 weeks after CABG.

The prospective pretest, posttest true experimental design was adopted for this study. Patients subjected to CABG for the first time on elective basis who were in the age group of 40-70 years, irrespective of number and percentage of blocks were recruited for the study. Patients who were having mental disorders including depression, patients with LVEF less then 35% and who had post operative arrhythmia, post operative arrest were excluded.

The important outcome variables were S-Anxiety, Self-efficacy for activities and their participation in ADL, Physical Exercise, Social, Spiritual Activities and Leisure Activities. S-Anxiety was measured using Speilberger’s STAI. Self-efficacy was assessed using Self-efficacy scale developed for this study. Activity level was measured using investigator developed Self-reported activity checklist. During the inpatient hospitalization period degree of dependency in ADL performance was assessed using Modified Scoring for Barthel Index (Shah, Vanclay & Cooper, 1989). The pulse rate, blood pressure and pain intensity scores were recorded from 2nd to 5th post operative day in the evenings.

The investigator developed video “Cope up with CABG” was viewed by the experimental group on the day before surgery after baseline testing and randomization. They were taught the yoga relaxation technique Naadi suddhi paranayama or alternative nostril breathing and yoga nidra. Their practice of yoga
relaxation was guided and supervised during the post operative hospitalization period that is from 2\textsuperscript{nd} post operative to 6\textsuperscript{th} operative day. The experimental subjects continued the practice of yoga at home and maintained the log of yoga performance. The audio track of yoga nidra facilitated their relaxation practice at home.

The post test of S-Anxiety was done on 2\textsuperscript{nd} & 6\textsuperscript{th} post operative day and 6\textsuperscript{th} post operative week after CABG. The Self-efficacy and activity level were tested on the 6\textsuperscript{th} post operative week. The data collected were analyzed using appropriate descriptive and inferential statistical method. Major findings of the study are presented below.

6.2 MAJOR FINDINGS OF THE STUDY:

- The mean S-Anxiety scores of patient on the day before surgery for the experimental and control group were 52.55 and 52.57 respectively.

- The S-Anxiety scores for both the group reduced but it was more notable in the experimental group which had yoga relaxation and video assisted information. On 6\textsuperscript{th} post operative day the mean anxiety score was 38.67 for experimental group and 44.47 for control group. On 6\textsuperscript{th} post operative week it was 35.21 for the experimental group and 40.72 for the controls.

- The “t” test and RM ANOVA revealed a significant difference between the experimental and control group (P<.001).

- The physiological correlates of S-Anxiety, the pulse rate and blood pressure showed a significant difference between the groups on the 5\textsuperscript{th} post operative day (P<.01) and by 6th post operative week (P<.001).
• Self-efficacy scores for various activities were low in the preoperative phase but it had improved during the 6th post operative week. The mean Self-efficacy scores were almost equal at baseline but in the post test done 6 weeks after CABG, experimental subjects reported much higher Self-efficacy for activities than control group (62.81 Vs 53.04). The ‘t’ test analysis revealed significant difference between the groups in the post test (p<.001).

• The experimental subjects had higher Self-efficacy for physical exercises, social and spiritual activities as well (p<0.001).

• A corroborative improvement in performance of activities along with Self-efficacy could be noted among the participants. The control group subjects also had negligable improvement whereas the experimental subjects had demonstrated a significant improvement in the performance of activities. The test of comparison - “t” test revealed statistically significant difference between the experimental and control group (P<.001).

• The MSBI score which reflected the level of dependence in ADL improved day by day from 2nd post operative day to 5th day post operative day. The experimental group had participated more and with higher degree of independence than control group in ADL. The RM ANOVA results projected a significant difference between the groups (P <.001).

• The Karl Pearson correlation analysis showed a significantly moderate inverse relationship between the S-Anxiety and Self-efficacy among the experimental group (r = 0.44, P < .001).
• Association test revealed participants from the lesser age group and men showed a higher Self-efficacy compared to older age group and the women. Similarly educational status and higher income group showed better Self-efficacy.

• The demographic variables that showed association with self reported activity were age, gender and employment status. Employed, male and younger subject reported higher level of activity.

• Analysis revealed a highly significant positive correlation between the Self-efficacy and activity \((r = 0.82, \ P < .001)\)

• The gender and income were significantly associated with S-Anxiety scores. \((P < .01)\) Women had reported higher S-Anxiety than men.

• Most of the experimental subjects expressed that the video was very beneficial. Some of the subject opined that interview with former patients were helpful in relating themselves with reality. They said more such interview could be incorporated in the video. The explanation with pictures made it easy to understand about the heart attack and heart surgery.

• Regarding Yoga relaxation techniques most of them said it was easy to perform and highly useful. They said they would continue the yoga relaxation in future. Almost all of them said they would recommend it to other patients subjected to CABG.

6.3 CONCLUSION

The study finding is supportive of the hypothesis 1 - i.e the CABG patients who were taught and practice stress reduction strategies report less anxiety than the
control group subjects. The subjects were homogenous except for the Stress reduction intervention. It can be inferred that the difference revealed in the post test comparison is due to the stress reduction strategies. Hence Hypothesis 1 is accepted.

The hypothesis second is - the participants who receive stress reduction strategies demonstrate improved Self-efficacy scores for ADL, physical exercise, social, spiritual and leisure activities than those who do not receive them. Since the empirical evidences support the hypothesis - 2, it is also accepted.

The CABG patients belonging to the Stress reduction group participated more in the ADL, physical exercise, social, spiritual and leisure time activities than the control group is the postulated hypothesis 3. The Self-reported activity scores and the Modified scoring for Barthel Index were higher for the experimental group compared to the control group. The “t” test results are highly supportive of the third hypothesis (P < .001).

The fourth hypothesis is, - the S-Anxiety and Self-efficacy were inversely related is supported by research findings (r = -.44, P<.001). The Hypothesis 5 is highly supported by the present study findings. Karl Pearson correlation analysis between the Self-efficacy and Activity (r = .82, P <.001) revealed highly significant positive correlation.

Based on the study findings it may be concluded that the combination of Stress reduction interventions the video assisted information along with Yoga relaxation techniques are capable of producing favorable outcomes that is reduced anxiety, improved Self-efficacy and enhanced activity participation.
6.4 IMPLICATION FOR NURSING PRACTICE

The CABG surgery is a safe and effective therapy for relieving symptoms of chronic heart disease. To get the long term success of the procedure it is mandatory that the individuals level of compliance to recommended lifestyle changes are high. An intervention that can positively influence and improve the individuals Self-efficacy and there by improve activity level in the crucial post operative period will be of greater advantage to the patients. Moreover a holistic approach as given in this study, video education along with Yoga relaxation technique will help reducing anxiety and the composite effect of this combined strategy is therefore would potentially have desirable practical health benefits for CABG patients. Given the current climate of increased staff shortages, an intervention that also requires minimal professional staff time would be particularly desirable.

In this context, findings of this study that post-operative CABG patients who viewed the videotape and practiced Yoga relaxation exhibited greater Self-efficacy more anxiety reduction and higher performance of activities than control subjects during the initial period of recovery after CABG is noteworthy. The videotape used in this study is relatively brief (~20min) and requires minimal professional staff time to administer. The Yoga Nidra and alternate nostril breathing are simple techniques and takes around 20 min. Indeed, it is feasible for patients to self-administer the video and develop mastery in the relaxation quickly. The relaxation techniques can contribute improving the psychological well being and thereby help restoring the physical wellness.

Similar video that orients the patient about surgery, related peri-operative protocols and home care management not only helps in reducing the Anxiety but also enhances patient knowledge and self care capabilities. It can
therefore improve their satisfaction. Considering the cost for production of one such video and the benefit it yields, the benefits outweigh the cost. The study finding clearly demonstrates better patient outcomes attributable to the stress reduction intervention.

6.5 IMPLICATION FOR NURSING EDUCATION

Research evidences are highly supportive of the holistic approach to cardiac rehabilitation following CABG for better patient outcomes. Integration of Yoga techniques 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 too. Continuing nursing educational programs may be organized for the faculty and practicing nurses to acquire skill in yoga relaxation.

Facilitating patients and family coping is one of the vital and integral components of nursing care. Nurses must ensure that patients develop appropriate understanding through application of patient education principles. The video used in this study was prepared utilizing the Video modeling and vicarious experience principles. Two former patients had shared their perception of pre operative problems and how could they overcome the critical post operative period. From this study it becomes vivid that former patients experience may be strategically used to enhance coping as well as for promoting sustained life style modifications.

Nursing students may be given opportunity to develop innovative educational modules incorporating the essential sensory procedural information. Hence nurse educators may plan a practicum for students to develop such educational or rehabilitation program utilizing vicarious experience and Yoga relaxation techniques.
6.6 IMPLICATIONS FOR NURSING ADMINISTRATION

The use of video education like the one evaluated in this study can spare professionals nursing staff time to allow more opportunity to answer patients questions and to focus aspects of the education program that must be individualized. It can ensure that all patients receive comprehensive and standardized instruction. It allows patients and their family members to receive the information at their own pace and even to review parts as necessary.

In fact, it should be noted that in this study only once video was administrated before surgery. It is possible that even stronger effects might be obtained if patients had the opportunity to view the tape multiple times during the first few weeks after discharge, if they were given a duplicate to take home with them. Patients and their family members may be shown the tape again at their check-ups or as part of a cardiac rehabilitation program it may be much more beneficial.

In summary, the incorporation of this or a similar video intervention into a patient education program can potentially benefit patients and staff while at the same time reducing health care costs. The alternate nostril breathing and yoga Nidhra are some of the techniques which can be easily learnt and taught by nurses. Even without much close supervision with the audio track guidance as the one used in this study patients can practice relaxation during the hospitalization period. If the same is made available to the patients for their continued practice at home it may help in gaining better patient outcomes as well as enhanced patient satisfaction.

6.7 LIMITATIONS

In the present study, the experimental subjects reported lesser S-anxiety, increased Self-efficacy and higher level of activity participation than the control subjects. The result indicates that this combination of video assisted teaching and
yoga relaxation techniques would be more beneficial in helping CABG patients. In this study, the subjects were selected on convenient basis but the assignment to experimental group was based on random technique. The investigator and the research subjects were aware of the group status. In a study of this nature, it is impossible to blind the participants or investigator about the group status. Hence, there is possibility of treatment effect coming into play on which investigator has no control.

The locus of control also plays an important role on Self-efficacy and activity level. There is no control over individual locus of control and its possible influence on Self-efficacy and activity. The investigator has no influence on the social factors contributing to stress such as financial burden, extent of social support. But association with some of the social variables had been included in the analysis.

The study sample consisted of only 15% of women. As far as the institution KMCH, where the investigation was carried out this is the usual proportion of women undergoing CABG. All the women who fulfilled the sample selection criteria were included. It would be desirable to enroll more number of ladies into the study so that the study finding could be generalized to women also. Owing to small number of female participants the present study finding may not be generalizable to women folk.

The study populations included for this investigation were from KMCH, which is a corporate hospital. Hence the finding is limited to population submitting themselves CABG in KMCH, Coimbatore, India only.

6.8 RECOMMENDATIONS FOR FUTURE STUDIES

♦ The substantial evidence in support of video assisted teaching and yoga relaxation techniques can be elicited with the larger samples using randomized clinical trial.
♦ Effectiveness of this intervention for a longer duration, probably 3 months, 6 months and 1 year can be elicited out using longitudinal study design.

♦ The combination of other psychosocial intervention along with physical conditioning can be investigated.

♦ The same study can be replicated with addition of objective measure of activities or functional status.

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

♦ Yoga relaxation and video may be applied to women subjected to CABG and can be tested for the efficacy in women population.

♦ Effect of video assisted information and yoga relaxation on anxiety, compliance and quality of life can be undertaken.