CHAPTER VI
SUMMARY, CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

The main aim of management of patients with various illnesses with medical and surgical treatment and nursing care is to help the patient to resume their routine activity as early as possible which in-turn improves the productivity of an individual. Based on the review of literature and the investigators observation, patients after major surgeries have pain and depression even after discharge from hospital which often affects their productivity. Nursing interventions based on sound research in accordance with the cultural beliefs of the patient are very important for the reduction of pain, anxiety and depression during the postoperative period. Healing touch, which is an important component of nursing forms the basis of Reiki therapy. Reiki therapy, one of the complementary and alternative therapies has no side effects when compared with the modern medical treatment. Reiki therapy is well accepted by the patients. Hence the researcher was interested to explore the effectiveness of Reiki therapy to improve the biophysiological status and alleviate anxiety, and prevent from further depression.

The purpose of the current study was to assess the effectiveness of Reiki therapy on biophysiological status, anxiety and depression among patients subjected to major surgical procedures at a selected hospital, Chennai.

The objectives formulated for the study were to

1. Determine the effectiveness of Reiki therapy on biophysiological status among patients subjected to major surgical procedures.
2. Elicit the effectiveness of Reiki therapy on the level of anxiety among patients subjected to major surgical procedures.
3. Identify the effectiveness of Reiki therapy on the level of depression among patients subjected to major surgical procedures.

4. Correlate between the biophysiological status, anxiety and depression among patients subjected to major surgical procedures.

5. Associate the biophysiological status, anxiety and depression with selected background variables among patients subjected to major surgical procedures.

To achieve the objectives hypotheses were formulated as follows

**H1**: There will be a significant change in temperature of patients who receive Reiki therapy than who do not.

**H2**: There will be a significant change in pulse rate of patients who receive Reiki therapy than who do not.

**H3**: There will be a significant change in respiration rate of patients who receive Reiki therapy than who do not.

**H4**: There will be a significant change in blood pressure of patients who receive Reiki therapy than who do not.

**H5**: There will be a significant change in pain score of patients who receive Reiki therapy than who do not.

**H6**: There will be a significant change in the level of anxiety of patients who receive Reiki therapy than who do not.
The investigator reviewed the literatures to support the study as well as the findings of the study. It was in two parts. Part A: related studies on biophysiological status, depression and anxiety among post operative patients, impact of biophysiological status, depression and anxiety on surgical outcome and effect of reiki therapy. Part B: conceptual framework based on Roy’s Adaptation model. The research approach used for this study was evaluative approach. The research design adopted for the study was randomized controlled trial. The study was conducted at Sri Ramachandra Medical Centre and Hospital, Porur, Chennai- 600 116. The target population for the study was patients subjected for surgical procedures. The accessible population for the study was patients who were admitted in Sri Ramachandra Medical Centre and Hospital and had underwent surgical procedures. Patients who underwent laparotomy/cholecystectomy/hysterectomy/mastectomy or hernia repair and fulfilled the inclusion criteria were selected as samples. The samples were allotted using block randomization.

The data were collected from the study participants using the tool that consisted of four sections. Section I consisted of the background variables which included demographic variables, socioeconomic status, clinical and surgical variables. Section II assessed the biophysiological status such as temperature, pulse, respiration, blood pressure and pain. State Trait Anxiety Inventory by Charles D. Spielberger and Center for epidemiological studies Depression (CESD) scale by Lenore S. Radloff was present in Section III and IV respectively.

Content validity was obtained from 12 experts. Reliability was checked by using split half and test retest method. Pilot study was done with 50 postoperative patients, 25 for study group and 25 for control group. The pilot study showed feasibility and practicability in conducting the study.
The main study was conducted among 350 postoperative patients, 175 for study group and 175 for control group to evaluate the effectiveness of Reiki therapy. The collected data were coded and analyzed using descriptive and inferential statistics. The results of the study were

On comparison of outcome variables

- During pre assessment, 48 (27.43%) patients in the study group and 40 (22.86%) in the control group had hyperthermia on day one, whereas on day seven, all patients 175(100%) in the study and the control groups had normal temperature. During post assessment, on day 1, 15 (8.57%) patients in the study group and 14 (8%) in the control group had hyperthermia, whereas on day 7, all patients 175(100%) in study and control groups had normal temperature. Independent t test revealed that during pre and post assessment of temperature there was no significant mean difference between the study and control groups from day 1 to day 7. Hence H1 was rejected.

- Comparison of pulse rate during post assessment in the study and control groups showed that, on day 1, 48 (27.43%) patients in the study group and 132 (75.43%) in the control group had tachycardia during post assessment, whereas on day 7 during post assessment, one (0.57%) patient in the study group and 35 (20%) in the control group had tachycardia.

- A significant mean difference on pulse rate was observed between the study and control groups on day 3 (p=0.022), day 4 (p=0.003), day 5, day 6 and day 7 at p=0.000 level, during the pre assessment. During the post assessment, a significant mean difference was observed between the study and control groups from day 1 to day 7 at p=0.000 level. Hence H2 was accepted.
• In the study group two (1.14%) patients on day 1 and one (0.57%) on day 7 had tachypnoea during post assessment. In the control group, 73 (41.71%) patients on day 1 and 30 (17.14%) on day 7 had tachypnoea. Independent t value observed during pre assessment, was significant between the study and control groups on day 2 (p=0.025), day 3 (p=0.018) and for day 4, day 5, day 6 and day 7 at p= 0.000. During post assessment significant mean difference was present on all seven days at p=0.000 level. Hence H3 was accepted.

• A significant mean difference was observed between the study and control groups on day 6 (p=0.0023) and on day 7 at p=0.000 level, during the pre assessment of systolic blood pressure. During the post assessment, a significant mean difference was observed between the study and control groups on day 1 and day 3 at p<0.05 level, on day 2 and day 4 at p< 0.001 level and on day 5, day6 and day 7 at p=0.000 level.

• During the pre assessment of diastolic blood pressure, a significant mean difference was observed between the study and control groups on day 6 (p=0.049). During the post assessment, a significant mean difference was observed between the study and control groups on day 1, day 2 and day 4 at p<0.05 level, on day 3 and day 5 at p< 0.001 level and on day6 and day 7 at p=0.000 level. Hence H4 was accepted.

• There was a highly statistical difference on the pain score during post assessment in the study and control groups on all seven days at p<0.000 level. Hence H5 was accepted.

• There was a significant reduction in the mean state anxiety among patients subjected to major surgical procedures in the study and control groups during posttest I, posttest II and posttest III at p=0.000 level. A highly significant reduction in the mean trait anxiety
between the study and control group was identified during posttest I, posttest II and posttest III at p=0.000 level. Hence H6 was accepted.

• There was a significant reduction in the mean depression among patients subjected to major surgical procedures in the study and control groups. During pretest, the mean depression score was 20.47 in the study group and 21.11 in the control group. A highly significant reduction in the mean depression between the study and control group was identified during posttest I, posttest II and posttest III at p=0.000 level. Hence H7 was accepted.

• There was a significant difference in RMANOVA in the pretest and posttest measurement of state anxiety, trait anxiety and depression among patients subjected to major surgical procedures in the study and control groups at p<0.000 level.

**On correlation**

• A significant positive correlation between pre and post assessment mean score of temperature, pulse rate, respiratory rate, systolic and diastolic blood pressure was present in the study group.

• A negative correlation was observed between pain and temperature, pulse rate, respiratory rate, systolic and diastolic blood pressure during pre and post assessment in the study group.

• In the control group, temperature had a significant negative correlation with respiratory rate and pulse rate during pre and post assessment. A significant positive correlation was present between pulse rate and respiratory rate. Diastolic pressure had a significant positive correlation with temperature and systolic blood pressure and negative correlation with pulse rate and respiratory rate during pre and post assessments.
• There was a significant positive correlation between state and trait anxiety at p<0.001 level. A moderate negative correlation was present between state and trait anxiety and depression during posttest I, II and III in the study group.

• A significant positive correlation was exhibited between state and trait anxiety during pretest and posttest I, II and III at p<0.001 level in the control group.

• Pretest depression score was also positively correlated with state and trait anxiety scores during pretest and posttest I, II and III and posttests depression score in the control group at p<0.001 level of significance in the control group.

• There was a significant positive correlation between pre and post assessment mean temperature score with state and trait anxiety and depression scores during posttest. Systolic and diastolic blood pressure was negatively correlated with posttest scores of state and trait anxiety and depression in the study group.

• Pre assessment pain score was significantly associated with state and trait anxiety and depression scores in the study group.

• A significant negative correlation was present between pre and post assessment respiration scores with state and trait anxiety posttest scores in the study group.

**On association**

• There was a significant association between the educational qualifications and post assessment temperature score on day 1 in the study group at p<0.001 level. Post assessment temperature score in the control group on day 7 was significantly associated with social support at p<0.01 level.
• In control group, on day 7 the post assessment pulse rate was associated with age, educational qualification, marital status, occupation, family monthly income, medical expense bearer, social support and type of surgery.

• On day 1, in the control during post assessment significant association was present between respiratory rate with medical expense bearer and type of surgery. With regard to study group significant association was present between respiratory rate and the type of residence on day 7 post assessment.

• In the control group, during post assessment respiratory rate was associated with age, educational qualification, occupation, family monthly income, medical expense bearer, social support, dependency of the family, type of family and anaesthesia on day 7.

• On day 1, systolic blood pressure was associated with co-morbid illnesses in the study group and with age, family monthly income, social support and co-morbid illnesses in the control group. On day 7, in the study group systolic blood pressure was associated with co-morbid illnesses and type of surgery. With regard to the control group, age, family monthly income and co-morbid illnesses with mean systolic blood pressure during post assessment.

• During post assessment in the control group, family monthly income, social support and co-morbid illnesses was associated with diastolic blood pressure and with occupation on day 7. With regard to the study group, on day 7 diastolic blood pressure during post assessment had an association with the family monthly income and co-morbid illnesses.

• In the study group, on day 1, age and marital status was associated with pain scores during post assessment and on day 7 with occupation.
• In the study group, occupation and family monthly income was associated with trait anxiety score during posttest I. In the control group during posttest I, II and III place of residence was associated with state and trait anxiety.

• Depression scores were associated with type of family and marital status during posttest II and III in the study group and with co-morbid illnesses during posttest III only in the study group.

CONCLUSIONS

The study concluded that, patients subjected to major surgical procedures have significant changes in the biophysiological status and experience some degree of anxiety and depression. Patient who received Reiki therapy for seven days had significant reduction in their biological status such as pulse, respiration, systolic blood pressure and diastolic blood pressure. A highly significant reduction in the pain score was observed among the patients who received Reiki therapy. State trait anxiety and depression was reduced significantly among patients who received Reiki therapy. Reiki therapy is an effective healing therapy in maintaining the physical and psychological well-being of the patients.

IMPLICATIONS FOR NURSING

IMPLICATIONS FOR NURSING PRACTICE

Nurses are in a vital position in providing care to postoperative patients. Routine assessment of anxiety and depression along with the vital signs can help nurses to provide comprehensive care to postoperative patients. By recognizing the impact of pain, anxiety and depression on the outcome of surgery could motivate nurses to remain focused on the psychological betterment of
the patients. The nurses have to maintain the therapeutic touch while providing care to the postoperative patients.

Complementary and alternative therapies such as Reiki therapy, yoga, and meditation should be imparted to nurses in hospital and community setup, so that it can be provided to patients based on their preferences. Community health nurses should continuously monitor the psychological status of the postoperative patients in their home setup after discharge. They could provide Reiki therapy or any alternative modalities of treatment during their home visits.

**IMPLICATIONS FOR NURSING EDUCATION**

Nursing is an art and science. The hands on skill can only be improved if the nurses have a sound knowledge. So the nursing curriculum plays an important role in molding the future nurses. Nursing curriculum should be enriched with complementary and alternative therapies for pain, anxiety and depression. A compassionate and empathetic attitude should be inculcated to students.

Graduate and post graduate students in the hospital and community should be educated to provide comprehensive health care to the patients. The nurse educators should teach Reiki therapy to the students based on their interest. Practicing Reiki therapy could be encouraged among students as it is a part of therapeutic touch therapy. Continuing education programs or short-term courses can be prepared for the nurses to expose skill on Reiki therapy.

**IMPLICATIONS FOR NURSING ADMINISTRATION**

Nursing administrators can develop policies, procedures and protocol regarding reduction of pain, anxiety and depression of postoperative patients. They could organize support program,
empowerment approach and coping strategies that will enhance the biophysical and psychological status of postoperative patients. The nurse administrators should conduct regular in-service education program to nurses to update them the use of drugless technique in reduction of pain, anxiety and depression of post operative patients. They have to implement depression management training programs. Pain management program should be arranged periodically to the nurses to update on pain management strategies.

The nurse administrators should take initiatives in organizing Reiki therapy clinic to promote the use of alternative therapies in pain management of postoperative patients in the hospital and health centre levels. Nurses should be encouraged to practice Reiki therapy along with their routine nursing care to the patients which in turn promotes the wellbeing of the post operative patients. Community health nurses should be encouraged to use Reiki therapy by the nurse administrator, which helps in reducing anxiety and depression of postoperative patients in the home setup which in-turn helps patients to return to their day-to-day activities as early as possible.

IMPLICATIONS FOR NURSING RESEARCH

The nurse researchers should work on the needs and problems existing in the nursing as well as the health care domains. The need for further research is very much important because evidence based nursing practice is gaining importance. Nurse must maintain a registry at the inpatient department to monitor morbidity, mortality and readmissions and disability due to illnesses that need surgical interventions could help for future study purpose. The nurses and nursing students could be encouraged to conduct research in Reiki therapy in order to abridge the results of the present study. By conducting researches on Reiki therapy we could lay emphasis on
the effectiveness of Reiki therapy on various illnesses in different settings for reduction of pain, anxiety and depression.

The results of the present study could be disseminated to nurses and the need for incorporating Reiki therapy in regular nursing practice could be encouraged. Generalization of the study results could be made by further replication in various settings. Communicating the research findings in an extensive way would create awareness among the nursing fraternity.

**RECOMMENDATIONS FOR FURTHER RESEARCH**

- A similar study can be conducted with study and control groups in two different settings.
- Comparative study can be done among various types of surgery and anaesthesia.
- The replication of the study can be done separately among male and female.
- A similar study can be conducted for various medical illnesses.
- A triangulation of qualitative and quantitative measures can be used to determine the effectiveness.
- A comparative study between preoperative and postoperative pain management of Reiki therapy.
- Similar study can be conducted in the community set up among patients underwent surgical procedures.
- A replication of the present study could be conducted with a control on pain medications.
- A similar study could be conducted by assessing anxiety and depression with objective measures such as salivary amylase.
- Long term effect of Reiki therapy can be analyzed by collecting data after 3 months, 6 months and one year duration.
THE STRENGTH OF THE STUDY

The study was throughout a challenging process. The study samples were fairly large in number N=350, allowing the study to be generalized among the post operative patients. The study allowed the postoperative patients to ventilate their feelings during the assessment of anxiety and depression which was more ventilating strategy for them.