CHAPTER VI

SUMMARY OF MAJOR FINDINGS

SECTION I : Description of sample characteristics.

a) Frequency and percentage distribution of Sample Characteristics.
   • 89 out of 200 (44.5%) patients in the age group of 55-65 years and 73 out of 200 (36.5%) patients belong to the age group of 45-55 years.
   • Majority of the patients were male patients i.e. 172 out of 200 (86%). Majority of them belonged to Hindu religion i.e. 143 out of 200 (71.5%). Most of the patients were private employees i.e. 74 out of 200 (37%).
   • Most of the patients were married i.e. 197 out of 200 (98.5%) and lived in urban environment i.e. 109 out of 200 (54.5%). Most of them belonged to nuclear family i.e. 108 out of 200 (54%).

b) Frequency and percentage distribution of Disease related variables.
   • 109 patients out of 200 (54.5%) had no past history of medical illness, whereas 91 of them reported to have past history of medical illness. 183 patients out of 200 (91.5%) had not undergone any surgery in the past.
   • Regarding the duration of illness, 67 out of 200 (33.5%) had the duration of illness between 6month – 1year and 56 out of 200 (28%) of them suffered with heart disease between 1-2years.
• 115 out of 200 (57.5%) patients reported to have an active lifestyle whereas 85 out of 200 (42.5%) had a sedentary lifestyle. 106 out of 200 (53%) had the habit of smoking and most of them were non-vegetarians i.e. 133 out of 200 (66.5%). 154 out of 200 (77%) of them reported of not having the family history of heart disease.

c) Chi-square test to ascertain similarity between selected demographic variables by group wise.
- The non significant p-value of 0.684, 0.078, 0.561 for sex wise distribution, education and marital status respectively indicates that both the groups are statistically similar in relation to sex, education level and marital status.
- The significant p-values of 0.013, 0.019, 0.050, 0.001, 0.001 for age, religion, occupation, habitat and family type respectively indicates that both the groups are statistically different and hence these were included as a covariate for the comparative analysis.

d) Chi-square test to ascertain similarity between selected disease related variables by group wise
- The non significant p-value of 0.320, 0.447, 0.072, 0.257, 0.881 for medical history, surgical history, lifestyle, smoking and dietary habits respectively indicates that both the groups initially were found to be similar.
- The patients in both the groups did differ in duration of heart disease and family history of heart disease. The significant p-values of 0.001, 0.001
for duration of heart disease and family history respectively were included as a covariate for the comparative analysis.

SECTION II: Comparison between Experimental and Control group on Physiological Parameter and Quality of Life.

a) Independent t-test to determine whether the experimental group and control group are similar in characteristics related to physiological variables, quality of life and anxiety at baseline.

- The non significant p-value of 0.418, 0.275, 0.889, 0.406, for systolic blood pressure, diastolic blood pressure, SaO2 and anxiety respectively indicates that both the groups are statistically similar.

- The significant p-values of 0.041, 0.029, 0.007, 0.000, 0.001 for heart rate, respiratory rate, pulmonary function (inspiratory capacity), peak expiratory flow and quality of life respectively indicates that both the groups are statistically different.

SECTION III: Effectiveness of Pulmonary Rehabilitation Program (PRP).

1. Effectiveness of PRP on Heart rate

i) Mean and Standard Deviation of Heart Rate of patients at baseline, 3rd day, 7th day and at discharge by group wise.

- The patients in the experimental group are initially having the mean heart rate of 85.66 beats per minute. The patients in the experimental group are having mean heart rate 85.81, 85.87 and 84.43 beats per minute
respectively on 3rd day, 7th day and at discharge. The mean heart rate for the control group patients has been 83.78, 82.99, 82.21 and 81.10 respectively at baseline, 3rd day, 7th day and at discharge

ii) ANOVA repeated measure for Heart Rate.
   - The significant p-value for the between group comparison infers that the two groups are statistically different by heart rate wise.
   - The non-significant p-value of the interaction effect “Assessment and Group” infers that the changes in the heart rate between baseline and 3rd day, from 3rd day to 7th day and 7th day to discharge has been similar for the two groups. i.e. whether the patients in the PRP group or Control group, the mean heart rate changes has equal for the two groups in all the four assessments

iii) ANCOVA repeated measure for Heart Rate after controlling with selected covariates.
   - The significant p-value of the Group comparison infers that mean heart rate are statistically different in the PRP group compared to the control group after controlling effects of the covariates.
2. Effectiveness of PRP on Respiratory rate

i) Mean and Standard Deviation of Respiratory Rate of patients at baseline, 3rd day, 7th day and at discharge by group wise.

- The mean respiratory rate has been 21.30, 22.32, 21.52, and 20.88 respectively at baseline, 3rd day, 7th day and at discharge for the PRP group of patients. The mean respiratory rate has been 21.96, 22.82, 22.84, and 22.32 respectively at baseline, 3rd day, 7th day and at discharge for the control group patients.

ii) ANOVA repeated measure for Respiratory Rate.

- The significant p-value for the between “Group” comparison infers that mean respiratory rate has been different for the PRP group compared to the control group.

- The result infers that the changes occurs between the two groups has been similar for the comparison between baseline to 3rd day and from 7th day to discharge. The main difference occurs between the two groups has been between 3rd day to 7th day. In the PRP group, there is a reduction in the respiratory rate from 3rd day to 7th day, Where as in the control group, it remains same, without any specific change from 3rd day to 7th day. This clearly infers that PRP is effective in controlling the respiratory rate.

iii) ANCOVA repeated measure for Respiratory Rate after controlling with selected covariates.
• The significant p-value of the “Group” comparison infers that PRP is effective in controlling the respiratory rate. The non-significant p-value of the covariates confirms that the changes occurs in the experimental group is due to the intervention.

3. **Effectiveness of PRP on Systolic Blood Pressure**

i) Mean and Standard Deviation of Systolic Blood Pressure of patients at baseline, 3rd day, 7th day and at discharge by group wise.

• The mean systolic blood pressure has been 125.18, 125.76, 124.50 and 122.88 respectively at baseline, 3rd day, 7th day and at discharge for the PRP group of patients. The mean systolic blood pressure has been 123.80, 124.62, 125.74 and 122.23 respectively at baseline, 3rd day, 7th day and at discharge for the control group patients.

ii) ANOVA repeated measure for Systolic Blood Pressure.

• The “Between Group” comparison result infers that in general the SBP has been similar for the two groups. The mean SBP has been similar for the PRP group and control group.

• The non-significant p-value also confirms that the changes occurs in SBP between the two groups are statistically similar.

• “The repeated contrast” test has been applied, when the changes are statistically significant. The significant p-value of the comparison between 7th day to discharge infers that in both the experimental and control group, there has been reduction in the SBP.
4. **Effectiveness of PRP on Diastolic Blood Pressure**

    i) Mean and Standard Deviation of Diastolic Blood Pressure of patients at baseline, 3rd day, 7th day and at discharge by group wise.

    - The mean diastolic blood pressure has been 78.76, 80.78, 80.13 and 79.26 respectively at baseline, 3rd day, 7th day and at discharge for the PRP group of patients. The mean diastolic blood pressure has been 80.08, 80.58, 80.00 and 78.68 respectively at baseline, 3rd day, 7th day and at discharge for the control group patients.

    ii) ANOVA repeated measure for Diastolic Blood Pressure.

    - The non-significant p-value for all the comparisons (Between group comparison and within Group comparisons of Assessment and interaction effect – Group and Assessment) infers that the two groups are similar with respect to the diastolic blood pressure level and the changes between the assessments are also similar for the two groups.

5. **Effectiveness of PRP on Pulmonary function (Inspiratory)**

    i) Mean and Standard Deviation of Pulmonary function (Inspiratory) of patients at baseline, 3rd day, 7th day and at discharge by group wise.

    - The mean pulmonary function (inspiratory) has been 1.056, 0.636, 0.771 and 0.999 respectively at baseline, 3rd day, 7th day and at discharge for the PRP group of patients. The mean pulmonary function
(inspiratory) has been 0.996, 0.600, 0.639 and 0.810 respectively at baseline, 3rd day, 7th day and at discharge for the control group patients.

- The mean value clearly indicates immediately after the CABG surgery, the mean pulmonary function (inspiratory) has been reduced and gradually it retains the level. Similarly, in the control group also there is a reduction in the mean pulmonary function (inspiratory) on 3rd post operative day, afterwards there is an increase in the pulmonary function (inspiratory).

ii) ANOVA repeated measure for Pulmonary function.

- The significant p-value of the comparison between 3rd post operative and 7th post operative day infers that increase in the pulmonary function level has been different for the two groups. The mean difference (0.771-0.636=0.135) in the experimental group has been higher than the mean difference (0.039) of the control group.

- Similarly the significant p-value of the comparison between 7th post operative day and at discharge day infers that the changes are different in the two groups. The mean difference has been 0.228 and 0.171 respectively for the experimental group and control group. The above results clearly indicates that PRP is effective in improving the pulmonary function level.
iii) ANCOVA repeated measure for Pulmonary function after controlling with selected covariates.

- The results indicate that pulmonary function at baseline also influence the pulmonary function level at discharge day in addition to the PRP intervention. The significance level of pulmonary function at baseline infers that it has an interaction with the PRP intervention to make an improvement in the pulmonary function after the CABG surgery.

6) Effectiveness of PRP on Pulmonary function (Peak Expiratory Flow)

i) Mean and Standard Deviation of Peak Expiratory Flow of patients at baseline, 3rd day, 7th day and at discharge by group wise.

- The mean PEF value for the experimental group has been 165, 101, 114.5 and 134.5 respectively at baseline, 3rd post operative day, 7th post operative day and at discharge. For the control group the mean PEF value has been 123, 60.5, 70.5 and 87.5 respectively at baseline, 3rd post operative day, 7th post operative day and at day of discharge from the hospital.

ii) ANOVA repeated measure for Peak Expiratory Flow.

- The “within comparison- Group*Assessment” result infers that the changes occur in the two groups are same. The level of decrease at initial and gradual increase thereafter has been similar for both groups.
• The results indicates that the PEF level has been in the higher-level in the experimental group in all the four assessments compare to the control group.

iii) ANCOVA repeated measure for Peak Expiratory Flow after controlling with selected covariates.

• The significant p-value for the Group confirms that PEF level has been higher in the experimental group compared to control group after controlling the effects of all the covariates.

7) Effectiveness of PRP on Saturation of Oxygen (SaO2)

i) Mean and Standard Deviation of Saturation of Oxygen (SaO2) of patients at baseline, 3rd day, 7th day and at discharge by group wise.

• The mean SaO2 level has been 97.7, 97.5, 97.7 and 97.8 respectively at baseline, 3rd post operative day, 7th post operative day and at day of discharge for the experimental group. Similarly the mean SaO2 level has been 97.69, 97.3, 97.5 and 97.5 respectively at baseline, 3rd post operative day, 7th post operative day and at day of discharge.

ii) ANOVA repeated measure for Saturation of Oxygen (SaO2).

• The significant p-value of the “Between Group” infers that there is a significant difference between the two groups with respect to the mean SaO2 level.
iii) ANCOVA repeated measure for Saturation of Oxygen (SaO2) after controlling with selected covariates.

- The significant p-value for the “group” infers that the two groups SaO2 level has been statistically different after controlling the effects of the selected covariates. Further, SaO2 level in baseline also influence on the SaO2 level during the day of discharge in both the groups.

8) Effectiveness of PRP on Pain

i. Mean and Standard Deviation of Pain of patients at baseline, 3rd day, 7th day, at discharge, 30th day, 60th day and 90th day by group wise.

- In the experimental group the pain level has been 32.8 on 3rd post operative day and gradually it reduces to almost nil pain on 90th day after surgery. For the control group the mean pain level has been 38.8 on 3rd post operative day and reduces to very little pain on 90th day after surgery. The above mean values infers that PRP is effective in controlling the pain level of the heart disease patients undergoing CABG surgery.

ii) ANOVA repeated measure for Pain.

- The “Between Group” comparison result infers that the pain level has been varies in the two groups. It is observed in the experimental group the pain level has been less compares to the control group.
• The significant p-value of the “Assessment” effect infers that the pain level from 3rd post operative day to 90th day after surgery has been different in both the groups.

• The “Repeated contrast test” result infers that in each assessment there is a significant reduction in the pain level in both the groups. From the mean pain value, it is evident; the PRP intervention is effective in controlling the pain level.

iii) ANCOVA repeated measure for Pain after controlling with selected covariates

• The non-significant p-value of the covariates infers that other variables influence on the pain reduction is not statistically significant. The “Group” comparison p-value confirms that PRP is effective in reducing the pain level of the heart disease patients undergoing CABG surgery

9) Effectiveness of PRP on Anxiety

i) Mean and Standard Deviation of Anxiety of patients at baseline, 3rd day, 7th day, at discharge, 30th day, 60th day and 90th day by group wise.

• In the experimental group from baseline to 3rd post operative day an increase in the anxiety level has been observed afterwards a gradual reduction in the anxiety level has been observed. In the control group
also a similar pattern has been observed with a slight variation in the reduction level.

ii) ANOVA repeated measure for Anxiety.

- The “Between Group” comparison infers that the two groups are statistically different by anxiety level.
- The significant p-value of the interaction effect “Group * Assessment” infers that the changes occurs between baseline and 90th day after CABG surgery has been different for the two groups. I.e. the changes occurs in the two groups are statistically different.
- The results clearly indicates PRP is effective in reducing the anxiety level of the patients undergoing CABG surgery.

iii) ANCOVA repeated measure for Anxiety after controlling with selected covariates

- The significant p-value of the “Group” infers that the anxiety level has been different for the experimental group and control group after controlling the initial variations in the selected covariates.

10) Effectiveness of PRP on Quality of Life (QOL)

i) Mean and Standard Deviation of Quality of Life (QOL) of patients at baseline, 3rd day, 7th day, at discharge, 30th day, 60th day and 90th day by group wise.
• In the experimental group there is a reduction in the average QOL during the post operative period and gradually it increases as day goes. In the control group also there is a reduction QOL level during the post operative period afterward it increase gradually. But the level of QOL in the control group is typically lesser than the experimental group

ii) ANOVA repeated measure for Quality of Life (QOL).

• The significant p-value of the “Between Group” comparison infers that in general, the two groups are statistically different by QOL of the heart disease patients undergone the CABG surgery.

• The results indicates the PRP intervention is effective in the improvement of the QOL of the CABG patients.

iii) ANCOVA repeated measure for Quality of Life (QOL) after controlling with selected covariates

• The significant p-value of the “Group” infers that QOL level has been varies in the two groups after controlling the effects of the selected covariates.