CHAPTER V

DISCUSSION OF THE FINDINGS

This section includes the discussion of the findings of the study which is based on the objectives of the study.

Effect of Pulmonary Rehabilitation Program on Physiological parameters of CABG patients:

Effect of intervention on Respiratory rate

In the current study the result infers that the changes occurs between the two groups have 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.

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.
Effect of intervention on pulmonary function

In the current study also the significant p-value of the comparison between 3rd post operative and 7th post operative day infers that the 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. Since the two groups are statistically different in this study in few variables, the analysis of covariance has been applied. The results indicates 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 a interaction with the PRP intervention to make an improvement in the pulmonary function after the CABG surgery.
Effect of intervention on peak expiratory flow (PEF)

In the current study, the mean PEF value for the experimental group 165, 101, 114.5 and 134.5 is higher than the control group 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. After the CABG surgery, in both the groups there is a reduction in the PEF level. Afterwards it is gradually increases in both the groups.

The significant p-value of the comparison between baseline PEF value and 3rd post operative mean value confirms in both the group, there is a significant reduction in the PEF value. Similarly the significant p-value of the comparison between 3rd post operative day and 7th post operative day and 7th post operative day and at day of discharge also infers that in both the groups there is an increase in the PEF level compares to their previous assessment.

The result 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. 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. The significant p-value for the Baseline PEF level infers that the changes in the PEF level is not only due to PRP intervention, the initial PEF level has also plays a vital role.
From the current study it can be inferred that the effect of PRP can be seen clearly on the respiratory rate, pulmonary function and peak expiratory flow. The other physiological parameters like heart rate and saturation of oxygen (SaO2) had minimal effect of PRP whereas on the blood pressure not much influence of PRP was seen.

Thus it was concluded that patients undergoing cardiac surgery experience reduced ventilatory capacity and respiratory muscle strength after surgery. Muscle training improved to retrieve Tidal Volume (TV) and Vital Capacity (VC) in the experimental group. Therefore findings of the present study are confirming with the studies conducted by - Matheus37, Moreno39, Barros41, Ferreira 42, Romanini48, Weiner49

**Effects of Pulmonary rehabilitation program ( PRP) on Pain and Anxiety of Patients after undergoing Coronary Artery Bypass Grafting (CABG).**

**Effect of intervention on pain**

In the current study the experimental group 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 patients undergone CABG surgery.
The “Between Group” comparison result infers that the pain level has been different in the two groups. It is observed in the experimental group the pain level has been less compared to the control group. Therefore the PRP intervention was effective in controlling the pain level.

Since the two groups of patients differ by certain demographic variables, analysis of covariance test has been applied, to find out is any other variable influence on the pain reduction level. The non-significant p-value of the covariates infers that other variables had no influence on pain reduction.

Pain is the most common and unavoidable problem for cardiac surgical patients. It can induce many changes in physiology and affects the recovery from the surgery. With the development of non-pharmaceutical pain control, the effect of relaxation therapy in pain control was emphasized and confirmed in the recent years by - Koranyi, Kaur, Tore, Miaofen, Shuldham, Hsing-Yu. Therefore the present study also reveals that the PRP is effective in reducing the post operative pain in CABG patient.

**Effect of intervention on anxiety**

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
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 that occur in the two groups are statistically different. The above results clearly indicate PRP is effective in reducing the anxiety level of the heart disease patients undergoing CABG surgery.

Analysis of covariance test has been applied to ensure the difference is due to the PRP intervention alone or any other variable has influenced. The non-significant p-value of the covariates infers that other variables had no influence on anxiety reduction.

The result of the current study is in consistent with the below studies. Tully69, Dao70, McKenzie71, Phillip72, Fariborz73, Gallagher74, Spezzaferri75, Fredericks76, Gallagher78, Hartford83, McCrone85.

It is a well known fact that depression, post traumatic stress disorder, and post traumatic stress disorder are prevalent in patients undergoing coronary artery bypass grafting procedures. It also increase the risk of death by magnitudes comparable with well-established physical health risk factors after coronary artery bypass grafting surgery. The stress and anxiety in these patients are at high magnitude. It is important to access this and give psychological support pre-operatively to decrease the anxiety in the patients. The present study also reveals that through PRP the post operative anxiety was reduced showing the effectiveness of PRP.
Effects of Pulmonary rehabilitation program (PRP) on quality of life of patients after undergoing Coronary Artery Bypass Grafting (CABG).

Effect of intervention on Quality of Life (QOL):

In the current study, in the experimental group there is a reduction in the average QOL during the postoperative period and gradually it increases as day goes. In the control group also there is a reduction QOL level during the postoperative period afterward it increase gradually. But the level of QOL in the control group is typically lesser than the experimental group.

The significant p-value of the comparison “Group * Assessment” infers that the changes occurs in the QOL from baseline to 90th day after CABG surgery, has been different for the two groups..

The above results indicates the PRP intervention is effective in the improvement of the QOL of the patients undergone CABG. It is in consistent with the studies done for examining the effect of a multidimensional preoperative intervention on pre surgery and post surgery outcomes. Arthur103, Macken95, Thomson96, Rothenhäusler97, Watson62,94, Dehadri43, Ferreira42.