Chapter – V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

The present study was carried out to investigate the effects of aerobic exercises and yogic practices on selected physical, physiological and biochemical variables. To achieve this purpose, 45 girls were selected from St. Joseph of Cluny Hr. Sec. School, Pondicherry. The age group of the subjects ranged between 14 to 18 years. The subjects were divided into three groups and each group consisted of fifteen subjects. The two experimental groups underwent two different training programmes namely aerobic exercises and yogic practices and the third group acted as control group which was not subjected to any training. The subjects selected were from three categories viz. Control group, aerobic experimental group and yogic experimental group, and the data on the selected variables were collected before and after the training period. For testing the mean differences between the control and experimental groups before and after the training period, the level of significance was set at .05 level of confidence. The pretest and post test data collected from control, aerobic and yogic experimental
groups were statistically analysed to find out the significance of the variables such as speed, muscular endurance, cardio respiratory endurance, resting pulse rate, breath holding time, respiratory rate, protein and lactic acid, by the use of analysis of covariance (ANCOVA). After eliminating the influencing of pre test, the adjusted post test means of experimental groups and control group were tested for significance by using ANCOVA. If there were any significant difference found, Scheffe’s post hoc test was applied.

**Conclusions**

1. The speed was significantly improved after the aerobic exercises and yogic practices when compared with the control group.

2. There was significant improvement in muscular endurance after the aerobic exercises and yogic practices.

3. The cardio respiratory endurance was found to be significantly improved after the aerobic exercises and yogic practices.

4. The resting pulse rate was also significantly improved after the aerobic exercises and yogic practices.
5. There was a significant improvement after the aerobic exercises and yogic practices on breath holding time when compared with the control group.

6. The respiratory rate was significantly improved after the aerobic exercises and yogic practices.

7. There was no significant change in the level of protein after the aerobic exercises and yogic practices.

8. The lactic acid was significantly lowered after the aerobic exercises and yogic practices.

The results of the study showed that there was a significant difference existing among aerobic exercise group and control group, and yogic practice group and control group on selected physical parameters viz. speed, muscular endurance and cardio respiratory endurance. It reveals that there was a significant improvement on selected physical parameters due to aerobic exercise and yogic practices.

The aerobic exercise, which actually involves very deep breathing can increase one’s vital conjectural which means better
gas exchange at the alveoli-capillary exchange surface. There would be concomitant increase in pulmonary capillarisation in order to make increased lung area effective as a gas exchange area of increased breath holding time.

Basal metabolic rate (BMR) is the number of calories used by the body when it is at rest. Along with, burning more calories, aerobic exercise increases the BMR, and the BMR can remain increased after 30 minutes of moderate physical activity. For aerobic exercise, more blood must be supplied to the working tissues. This means the heart will have to pump more blood and also more oxygen should reach the muscles by increased rate of respiration. Oxygen helps to burn the calories more efficiently.

The aerobic exercise training helps the persons to achieve better oxygen, carbon-di oxide exchange, resulting in better oxygen utilization, slower rate of breathing.

The venous return is much better due to phase changes in breathing. The pulmonary vascular bed relaxes to accommodate more inflow of oxygen and blood. Better diffusion of gases occurs.
Elasticity of the lungs and the entire respiratory tract is maintained till old age. The vital capacity, inspiratory volumes are increased. The residual volume is decreased as more complete exhalation is performed. The alveoli are exercised, which promotes excellent excretion of toxins and gases. The healthy movement of diaphragm massages the abdominal organs, improving their blood supply and aiding the venous drainage to the thoracic cavity.

Therefore, the lungs become healthy and powerful, a good insurance against respiratory problems.

The results of the study also indicate that the aerobic exercise and yogic practice help decrease the resting lactic acid and no changes found to occur in protein. In the present study, training has influenced only on carbohydrate metabolism. Protein is stable and normally it is not utilized as an energy fuel like carbohydrates and fats. Hence there was no significant change in the concentration of serum protein after the training period.
Recommendations

Based on the results of the study, the following recommendations are made by the present investigator.

1. Similar study may be conducted using male subjects

2. These training might be recommended to different age groups.

3. Similar study may be conducted for a longer duration of training on large or small samples as to ascertain the results of this study.

4. Similar study may also be conducted to find out the effects of other aerobic exercises and yoga practices on other physical, physiological and biochemical variables not tested in this study.