CHAPTER V

SUMMARY, CONCLUSION AND RECOMMENDATION

Summary

The development added new dimension to the study of morphology. Anthropometry was first used in study of morphology in seventeenth century.

The objective of the present study is to find out whether the effect of selected Yogic Practices (Asana & Pranayama) & Aerobic exercises on Somatotype Components and its relationship with selected Health Related Physical Fitness and Bio-chemical variables of collegiate boys.

For the purpose of the study forty-five college male students who are residing in the Government boys' hostel, Lawspet, Puducherry were selected at random from 250 students and their age ranges from 18 to 25 years. They were divided into three groups namely Control group, Yogic group and Aerobic group. The Control group consisted of 15 subjects, the Yogic group consisted of 15 subjects and Aerobic group consisted of 15 Subjects.

During the training period the Yogic group and the Aerobic group, underwent fourteen weeks of training on their respective program. The Yogic group was trained on Asanas and Pranayama. The Aerobic group was trained on Aerobic exercises with rhythmic music with various
types of aerobic type movements. The Progressive load method was used up to fourteen weeks for the respective groups. The training was given during 5.P.M to 6.30 P.M every day for 5 days a week. The data pertaining to pre test and post test of experimental variables were derived through the following methods.

The Somatotype component of the subjects were analysed with Anthropometric measurements. Endomorphic Component was derived from Triceps, Sub-scapular, Suprailiac and Calf skinfold. A mesomorphic component was derived from Height, Humerus Width, Femur Width, Bicep Girth and Calf Girth, and Ectomorphic component was derived from Height and Weight.

The Health related physical fitness components such Muscular Strength and Endurance, Muscular Flexibility, Cardio vascular Endurance & Body Composition were tested using the following test methods. Muscular strength and Endurance is measured by Arm strength with Pull-up and push-ups test, and Abdominal strength with Straight and bend knee Sit-ups tests. Muscular flexibility was tested with Sit and reach test, trunk extension and upward backward arm movement test. Cardio vascular Endurance was tested with twelve minutes run Coopers’ test. Body Composition was tested with the help of skinfold caliper in different regions of the body such as Triceps, Subscapular, Suprailium, Midaxillary,
Abdominal, Thigh and Chest skinfold. The Bio Chemical variable LDL, HDL, TG, VLDL, TC, Hb and FBS were tested with help of authorized lab.

The experimental variable were derived, analysed and discussed on Endomorphic component, Mesomorphic components, Ectomorphic component, Height, Weight, Humerus width, Fumer width, Arm strength, Abdominal strength, Total flexibility, Percent Body fat, twelve minutes run, LDL, HDL, TG, VLDL, TC, Hb and FBS.

The primary analysis of Pre-test and Post test data of the control and Experimental groups such as Yogic group and Aerobic group were statistically examined for significant differences. The Analysis of covariance was used find F ratio for the differences among the control group, the Yogic group and the Aerobic group for the experimental variables. The Scheffe’s post hoc test was analysed and the result also showed that there was a significance difference. In all the cases .05 level of confidence were selected to reject the null hypothesis.

The secondary purpose was to find out the different relationship (simple, partial and Multiple) between somatotype component (Endomorphic component, Mesomorphic component and Ectomorphic component) and Experimental variable (Health related physical fitness variables and Bio chemical variables) were computed by Simple correlation, Partial correlation and Multiple correlation.
Similarly, the difference between the pre-test and post-test of different relationship (Simple, Partial and Multiple) between somatotype component (Endomorphic, Mesomorphic and Ectomorphic component) and Experimental variable (Health related physical fitness variables and Bio chemical variables) were computed by ‘t’ test.

Somatogram chart was used to plot the body type or somatotype which assessed from Heath carter somatotype rating form for the Pre and post test of Control group, the Yogic group and the Aerobic group.

**Conclusions**

1. The Ectomorphic component was significantly improved by the Aerobic exercises than the Yogic practices.
2. There were no significant effect on the Yogic practices and the Aerobic exercises on Endomorphic and Mesomorphic component
3. The Height was significantly increased in Aerobic exercise.
4. The Weight was significantly decreased in the Yogic practices than aerobic exercise
5. There was no significant effect on Humerus and femur width in the Yogic practices or the Aerobic Exercises.
6. The Bicep and Calf girth were decreased significantly in the Aerobic exercises than the Yogic practices.
7. The Arm strength and Abdominal Strength were significantly improved in the Aerobic exercises than the Yogic practices.

8. The flexibility was improved significantly in the Yogic practices then aerobic exercise.

9. The percent body fat was significantly decreased in the Yogic practices than Aerobic exercises.

10. The cardiovascular endurance was improved in the Yogic practices than the Aerobic exercises.

11. There was no effect on the Aerobic exercise or the Yogic practices on LDL, VLDL, T.G, T.C and FBS.

12. The HDL and Hemoglobin were significantly improved in the Yogic practice than the Aerobic exercise.

13. The significant relationship between the Endomorphic component and Percent body fat was found in the Pretest and the Post of all the three groups.

14. The significant relationship between the Mesomorphic component and Percent body fat was found in the Pretest of the Yogic group and the Aerobic group and the Post test of the Aerobic group.
15. The significant relationship between the Ectomorphic component and the Arm strength was found in the Pre test and the Post test of the Yogic group and the Aerobic group.

16. The partial relationship between Endomorphic component and total flexibility was found in the pretest and the post test of Aerobic group, the Endomorphic component and percent body fat was found in all the three group and the Endomorphic and twelve minutes run was found significant in the pre and Post test of the Yogic group.

17. The partial relationship between Mesomorphic component and Arm strength was found in the pretest and the post test of Control group, the Mesomorphic component and abdominal strength was found in the Pre test and Post test of the Control group and the pre test of the Aerobic group and the Yogic group.

18. The partial relationship was found in Ectomorphic component and Arm strength in the pre test and post test of the Yogic group and Aerobic group.

19. The combined relationship between Endomorphic component and HRPF components were found significant in pre test and post test of all the group.
20. The combined relationship between Mesomorphic component and HRPF components were found significant in pre test and post test of the Yogic group and Aerobic group.

21. The combined relationship between Ectomorphic component and HRPF components were found significant in post test of the Yogic group, and the pre test and the post test of Aerobic group.

22. The significance between the Pre and post test correlation was found in the Endomorphic component and the Percent body fat in Aerobic Exercise.

23. The significance between the Pre and Post test partial correlation was found in the Endomorphic component and the Percent body fat, and Mesomorphic component and total flexibility in Aerobic Exercises.

24. The significance between the Pre and Post test multiple correlation was found in the Endomorphic components and the Health related Physical Fitness Components in Aerobic Exercise.

25. The Somatogram Showed that distance between the mean somatotype values of Aerobic group were Endo-ectomorph moved more toward Mesomorphic component of Ecto-endomorphic than Yogic Group. It concludes that somatotype changes happened more in Aerobic exercises
Recommendations

The results of the study have yielded the following recommendation.

1. The same study may be conducted for female students.

2. Combination of Yogic practices and Aerobic exercise on different age group, different intensity and different sex may be studied.

3. Similar study may be conducted for motor fitness or skill related physical fitness variables of one or two or more games.

4. Biochemical analysis can be deeply analysed on somatotype.

5. Study on effect of yogic practices, aerobic exercise and combination on obesity management can also be studied.

6. Effect of Plyometric exercises on obesity management can also be studied.