CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 SUMMARY

An active lifestyle which includes regular exercise is reported to promote physical capacity, quality of life and self-esteem, as well as reducing the risk of certain diseases. In this area, the effects of yoga asana and pranayama have received particular attention because of its link with a reduced risk of cardiovascular disease. This may be via for both direct independent effect, and its influence upon other established risk factors.

Obesity is serious and common health problem. Most of the people are obese when they develop diabetes and the obesity is becoming a major health hazard worldwide. Physical inactivity increases the risk of diabetes independent of obesity. This inverse association has been largely attributed to the fact that exercise increase insulin sensitivity, improves glucose tolerance, and promotes weight loss. Obesity may be defined as the excessively high amount of body fat in relation to lean body mass. This occurs your intake of calorie is greater than the amount of energy you have burn.

Medical professionals measure how much a person is overweight by figuring his BMI (Body Mass Index). Obesity may be caused by genetic factors, though some psychological, environmental, and some other factors also plays a vital role. Obesity may runs in the family or may be caused by lack of activity or a sedentary lifestyle. Some people also eat as a way to cope with some
psychological disturbance. Other cases are due to binge eating or the feeling that one cannot control how much he is eating. Illnesses like hypothyroidism, Depression and certain neurological ailments can also lead to overeating. Drugs like steroids may cause a person to gain weight excessively. Both Obesity and Diabetes is highly preventable through proper diet, exercise and lifestyle change.

College students are the future citizens of country. Their excellence in all fields of life is the need of the hour. Physical activity patterns of college students and factors influencing physical activity in this population have been examined by a number of researchers. Most of the college students are more active on weekdays when compared to weekends, suggesting that different types of intervention strategies might be needed to encourage physical activity in college students.

Yoga Lifestyle will be most suitable to facilitate treatment for this twin epidemic. The Yoga principle on Healthy Diet and the practice of the asanas will help to balance the endocrine system, tone the abdominal organs, stimulate both the nervous and Circulatory System, and reduce stress. Yoga also helps one to gain a better understanding of oneself, leading to acceptance and appreciation which will to help eliminate the psychological reasons for Obesity. The practice of Yoga deals with all the aspects of an individual: the mind, body and spirit, giving a person control over his mind and body and making the effect is more permanent than other techniques.

The purpose of this study was to find out the effects of asanas, pranayama and combined training on dexterity, body weight, body composition, basal
metabolic rate and biochemical variables of college men. To achieve this purpose of the study, 120 male subjects were selected at random from Government Law College, Madurai, Tamil Nadu, India. The age of the subjects ranged between 18 and 25 years. The selected subjects were divided into three experimental groups and a control group with thirty subjects (n=30) each. Experimental group I underwent asanas training (AT), Group II underwent pranayama training (PT), Group III underwent combination of asana and pranayama training (APT) and Group IV served as control group (CG) for the training period of 12 weeks.

Subjects of the four groups (AT, PT, APT & CG) were tested on selected criterion dexterity, body weight, body composition (body fat, lean body mass, basal metabolic rate), HDL, LDL, TG and HCT prior to and after the 12 weeks of training period.

The following dependent variables were assessed by using standard tests.

**Dexterity Level**

Dexterity level was assessed by O’Conner’s finger dexterity test, the unit of measurement was in numbers.

**Bodyweight**

Bodyweight was measured by weighing machine and the unit of measurements was in kilogram

**Body composition**

Body fat percentage was assessed by skin fold caliper and the unit of measurements was in millimeter.
Lean body mass was assessed by skin fold caliper and the unit of measurements was in Kilogram.

**Basal metabolic rate**

Basal metabolic rate was calculated by Harris and Benedict formula and the unit of measurements was in kcal/day

**Bio Chemical Variables**

Low Density lipoprotein (LDL) was assessed by Biochemical lab test and the unit of measurements was in mg/dl.

High density lipoprotein (HDL) was assessed by Biochemical lab test and the unit of measurements was in mg/dl.

Triglycerides (TG) were assessed by Biochemical lab test and the unit of measurements was in mg/dl.

Hematocrit (HCT) was assessed by Winthrop tube test and the unit of measurements was in percentage.

The subjects were trained six days per week and the training programme for each session lasted for 45-60 minutes approximately, this included 5 minutes warm up and 5 minutes relaxation procedure. Training was performed for a period of 12 weeks. The test was conducted on all the variables before and after 12 weeks training period.

The data collected from the four groups before and after the training period were statistically analysed for significant improvement if any. In order to find out the individual effect dependent ‘t’ test was applied. No attempt was made to equate the group in any manner. Analysis of Co-Variance (ANCOVA) was used to compare the effects of various combinations of AT, PT and APT on dexterity
level, body composition and biochemical variables of college men. Whenever, the obtained ‘F’ ratio for adjusted post test means was found to be significant test, scheffe’s post hoc test was used to determine which of the paired mean difference was significant. 0.05 level of confidence was fixed to test the significance level.

5.2 CONCLUSIONS

Based on the results of the study the following conclusions were drawn.

1. Within the limitations and on the basis of the findings, it was very clear that asanas training for the period of twelve weeks produced significant changes over dexterity level, body composition variables of body weight, body fat percentage, lean body mass, basal metabolic rate, bio chemical variables of HDL, LDL, TG and HCT of college men.

2. The pranayama training produced significant changes over dexterity level, body composition, and bio chemical variables of college men.

3. The results of combined effect confirm positively and significantly the effects of asanas and pranayama training on dexterity, body composition and bio-chemical variables of college men.

4. The Combination of asanas and pranayama training produced significant changes over dexterity, body composition variables (body weight, body fat percentage, lean body mass, basal metabolic rate) and bio-chemical variables (HDL, LDL, TG and HCT ) of college men than the other training groups

5. Asanas training was found to be better than pranayama training to produce significant changes in dexterity level, body composition, and bio chemical variables of college men.
6. From the result, it is inferred that 12 weeks of combination of asanas and pranayama training for six days per week is found to be most appropriate training protocol to bring out the desirable changes over dexterity level, body composition and bio chemical variables of college men.

5.3 RECOMMENDATIONS

The following recommendations are made with a strong feeling that they would further encourage other professional colleges and pave a way for further studies on this particular area.

1. The findings of the study showed that there was an improvement in the dexterity level, increase the lean body mass, haematocrit and high density lipoprotein level, reduce body fat, decrease the low density lipoprotein and triglycerides level due to the influence of combination of asanas and pranayama training. Hence it was recommended that this training could be included as one of the training methods.

2. Since, the combination of asanas and pranayama training was identified as the decisive training, it was recommended to the doctors, coaches and physical education teachers to include it in their regular schedule of remedial/coaching programme.

3. Asanas and pranayama practice can be integrated with their life style to develop moderately in physiological and bio-chemical parameters in turn it will improve the overall fitness and health of the subjects.

4. Similar study may also be conducted for women students. Deep researches are to be conducted to find out response to asana, pranayama, and combination asana and pranayama.
5. Studies of similar nature may also be conducted by changing the dependent variables and independent variables.

6. Similar study may be conducted using various yogic practices like kriyas, bandhas, mudras and meditations by employing more experimental group.

7. Asanas and pranayama may be included in present scenario and future public health promotion policies.

8. Similar study may be designed to investigate the effects of dietary intervention and various training programmes.

9. Combined training will be of great use for the trained subjects by increasing both the intensity of training and number of training sessions in a week.

10. The intensity of the training and number of training sessions can be fixed according to the age, gender, obesity level and performance level of the subjects.