Chapter V
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

Training is not a novelty or a recent discovery. It existed both in ancient Egypt and later in Greece where people were systematically trained for both military and Olympic endeavours. Today, through training, as in ancient times, the athlete prepares himself/herself for a definite goal. In order to elevate athletic performance, the main scope of training, centers on increasing the athlete’s working capacity and skill capabilities as well as developing strong psychological traits.

Training is a systematic athletic activity of long duration, progressively and individually graded aiming at modeling the human physiology and functions to meet demanding tasks. Though many methods prevail to develop the performance, the role of aerobic and anaerobic training is a familiar one. Aerobic and anaerobic training is now a popular activity utilized by both men and women of all ages as an attempt to improve physical condition and sports performance. However, there is still much controversy concerning the beneficial effects of method of aerobic and anaerobic training with different subjects.
In this context, the investigator made an attempt to investigate the effects of aerobic and anaerobic training among athletes and non-athletes. So, the purpose of the present investigation was to find out the relative effect of aerobic training and anaerobic training on selected biochemical variables such as cholesterol, proteins, hemoglobin, pyruvic acid, lactic acid, blood urea and blood sugar of athletes and non-athletes.

To achieve the purpose of the study, 45 athletes and 45 non-athletes were selected and they are divided randomly into three groups namely control group, aerobic training group and anaerobic training group with 15 subjects each. The subjects were college male students between the age group of 18 and 21 years from Ayya Nadar Janaki Ammal College, Sivakasi, TamilNadu, India.

The first experimental group (Athletes and non-athletes) underwent aerobic training, second experimental group (Athletes and non-athletes) underwent anaerobic training and third group act as control who did not participate in any training during the training period other than their daily schedule in the curriculum.

The variables selected for the study were cholesterol, protein, hemoglobin, pyruvic acid, lactic acid, blood urea and
The selected biochemical variables for the study were assessed by the standardized tests. The data were collected before and immediately after the experimental period on all selected variables.

The design selected for this study was 2x3 factorial designs. The investigator selected subjects on random basis from the students studying Bachelor’s degree at Ayya Nadar Janaki Ammal College, Sivakasi, TamilNadu, India. Ninety subjects were divided at random and assigned into six groups of fifteen each. No attempt was made to equate the groups in any manner. Hence, to make adjustments for difference in the initial means and test the adjusted post test means for significant differences, the two way (2x3) analysis of covariance (ANCOVA) was used. Whenever F-ratio was to be found significant for adjusted post test, the Scheffe’s test was used as a post hoc test. In all the cases 0.05 level of significance was fixed to test the hypothesis.
Conclusions

From the analysis of the data, the following conclusions were drawn.

1. Aerobic training had achieved significant improvement on hemoglobin, pyruvic acid, lactic acid, blood urea and blood sugar among athletes and non-athletes.

2. Anaerobic training had achieved significant improvement on hemoglobin, pyruvic acid, lactic acid, blood urea and blood sugar among athletes and non-athletes.

3. Aerobic and anaerobic training had achieved significant decrease on cholesterol among athletes and non-athletes when compared to the control group.

4. Significant differences were found among experimental (aerobic and anaerobic training) and control groups towards improving the selected criterion variables such as cholesterol, hemoglobin, pyruvic acid, lactic acid, blood urea and blood sugar between athletes and non-athletes.

5. It was concluded that aerobic training package is found to be better than anaerobic training for significant changes on cholesterol, hemoglobin, pyruvic acid, blood urea and blood sugar.
6. It was to be concluded that anaerobic training package is found to be better than aerobic training to increase lactic acid.

**Recommendations**

1. In the present study, it was concluded that hemoglobin, pyruvic acid, lactic acid, blood urea and blood sugar were improved by aerobic and anaerobic training and decreased the cholesterol level. Hence, it is recommended to the coaches, trainers and physical educators to adopt these findings.

2. A similar study may be conducted by selecting physical and physiological variables as criterion variables.

3. A similar study may be attempted by selecting the state or national level athletes or players as subjects.

4. A similar study may be conducted on female subjects.

5. A similar study may be undertaken and its influences on psychological parameters may be assessed.

6. A similar study may be undertaken and its influences on physiological parameters may be assessed.