CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 SUMMARY

Resistance Training involves the application of elastic or hydraulic resistance to muscle contraction rather than gravity. Weight training provides the majority of the resistance at the beginning, initiation joint angle of the movement, when the muscle must overcome the inertia of the weight's mass.

Knowing exactly what kind of weight training program to follow for any particular sport is not simple. As exercise physiologists George Brooks and Thomas Fahey explain it, "The intensity and duration of tension are the most important factors eliciting strength increases". The strength requirements of each sport must be assessed in order to develop an appropriate, specific program. In general, sports requiring muscular endurance employ strength- training schedules involving a great number of repetitions, while those requiring strength use fewer repetitions. Therefore, serious athletes need to work under the direction of strength-training coaches who have the knowledge and experience to create the kinds of programs appropriate to any given sport.

In this study, two types of weight training exercises were compared, namely, the progressive sub maximal resistance training which is for the development of all round strength is best achieved progressing this through weight training. This is a strength training method in which the overload is constantly increased to facilitate adaptation. Progressive resistance is essential for building muscle and reaching goals. In progressive regressive resistance training in the first half the resistance is progressively increased while decreasing the repetitions. In the second half the resistance is gradually decreased while increasing the repetitions..

The purpose of the study was to find out the effects of progressive sub maximal resistance training and progressive regressive sub maximal resistance training on selected physical and physiological variables among college men. To achieve the purpose of this study, ninety college men were selected from Indian Institute Technology (IIT) Madras students who are residing at the Institute Hostels. The selected subjects age group were ranging from eighteen to twenty five years. The subjects were randomly divided into three groups and each group consists of thirty subjects. Group one acted as experimental group one and Group two acted as experimental group two and group three acted as control group. Group three underwent routine activities and care was taken that they should not involve in special exercise programmes. Experimental group one underwent progressive sub maximal resistance training and experimental group two under went progressive regressive sub maximal resistance training for twelve weeks.

Physical fitness components, speed, abdominal strength, leg strength and shoulder strength and physiological variables, pulse rate, body fat percentage, mean arterial blood pressure were selected as criterion variables. For the purpose of the study, random group design was employed. Group one and Group two acted as experimental group. Group three served as Control Group.

The interventional training programmes for this study were twelve weeks progressive sub maximal resistance training for experimental group I and progressive regressive sub-maximal resistance training for experimental group II and the control group was not given any training except of the routine. Data were collected on the selected physical fitness variables and physiological variables before and after the experimental period of twelve weeks. The differences between the initial and final scores in selected variables were subjected to statistical treatment using Analysis of Covariance (ANCOVA) to find out whether the mean differences were significant or not.

5.1.1 Level of Significance

The subjects were compared on the effect of progressive sub-maximal resistance training and progressive regressive sub-maximal resistance training on selected physical and physiological variables among college men. The selected criterion variables were speed, abdominal strength, leg strength and shoulder strength, pulse rate, percent body fat, vital capacity and mean arterial blood pressure. The analysis of covariance (ANCOVA)

was used to find out the significant difference if any, between the groups on selected criterion variables separately. In all the cases, .05 level of confidence was fixed to test the significance, which was considered as appropriate.

The results of this study proved that there were significant effects due to progressive sub maximal resistance training and progressive regressive sub maximal resistance training on physical variables, speed, abdominal strength, leg strength and shoulder power and physiological variables, pulse rate and percent body fat. There was no significant influence due to experimental treatment on physiological variables, vital capacity and mean arterial blood pressure.

5.2 CONCLUSIONS

Within the limitations of this study, the following conclusions were drawn:

- It was concluded that the experimental treatments, twelve weeks progressive sub maximal resistance training and progressive regressive sub maximal resistance training have significantly improved physical variables speed, abdominal strength, leg strength and shoulder strength comparing to control group.
- It was concluded that progressive regressive sub maximal resistance training was significantly better than progressive sub

maximal resistance training in improving leg strength and shoulder strength of the subjects.

- It was concluded that the experimental treatments have significantly altered physiological variables pulse rate and percent body fat comparing to control group.
- It was concluded that experimental treatments have not altered physiological variables vital capacity and mean arterial blood pressure among college men.
- It was concluded that progressive regressive sub maximal resistance training was better in reducing pulse rate of the college men than progressive sub maximal resistance training.
- It was concluded that progressive sub maximal resistance training was better in reducing percent body fat than progressive regressive sub maximal resistance training.

5.3 RECOMMENDATIONS OF THIS STUDY

The findings of this study proved that college men physical fitness variables, speed, abdominal strength, leg strength and shoulder strength could be significantly improved through progressive sub maximal resistance training, which was in agreement with the previous researches. It was also found that progressive regressive sub maximal resistance training

significantly altered pulse rate and percent body fat of the college men. In the light of the above findings, the following recommendations are made.

- Efforts may be taken to include progressive sub maximal resistance training and progressive regressive sub maximal resistance training in the physical education curriculum of the college men as it improves overall physical fitness and physiological variables.
- Efforts may be taken by coaches, sports scientists and educational authorities to include progressive sub maximal resistance training in the training schedules of athlete preparation.
- Advantages of progressive sub maximal resistance training may be popularized among college men for their all round development of strength and physical fitness levels.

5.4 SUGGESTIONS FOR FURTHER RESEARCH

- The effect of progressive sub maximal resistance training and other training on development of strength of the college men may be under taken.
- A similar study may be conducted among college sportsmen to find out the effect of progressive sub maximal resistance training on their physical fitness levels and skills of the games.

- Since this study covered the college men only, a similar research may be undertaken among college women to find out the effect of progressive regressive sub maximal resistance training.
- A comparative effect of resistance training with weights and other modes of resistance training may be under taken to throw more lights on the usefulness and purposes of resistance training.