

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 SUMMARY

One of the major goals of an exercise programme is to make it not only intense enough to see some positive results but also to make it enjoyable enough where it becomes a part of an individual's regular routine, any person should look forward to workout session and not dread it. It is better to start gradually and take more time reaching the objectives than to start at a high level and drop out because of injury caused by either the intensity or frequency of the programme.

The intensity and length of the work interval should be based upon the primary energy system being used in the activity. Sprinters should have short high intensity intervals whereas marathon runners may run intervals of 3 miles at race pace or slower. There are several factors that affect the resulting heart rate besides exercise and training. Although the extent of variation differs with each individual body position has a definite effect upon the heart rate. The training effect of exercise depends upon the amount of stress imposed upon the relevant part of the body. There are variation in the resting heart rate response that is used in the exercise gives a better indication of intensity.

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response that is used in the exercise gives a better indication of intensity. Physiological changes ranging from training are generally related to the intensity of the exercise.

Intensity is expressed in terms of efforts relative to the subject control capacity. The enhancement of capacity is greater when load of 90 to 100% of the individual capacity are imposed.

Thus, weight training can provide significant functional benefits and improvement in overall health and well-being, including increased bone, muscle, tendon and ligament strength and toughness, improved joint function, reduced potential for injury, increased bone density, a temporary increase in metabolism, improved cardiac function, and elevated HDL (good) cholesterol. Training commonly uses the technique of progressively increasing the force output of the muscle through incremental increases of weight, elastic tension or other resistance, and uses a variety of exercises and types of equipment to target specific muscle groups. Weight training is primarily an anaerobic activity, there is every possibility of reaping the benefits of aerobic exercises through manipulation of intensities and frequencies of weight training. In this study, the researcher was interested to find out whether weight training of different intensities and frequencies can alter selected motor fitness variables, speed, explosive power, endurance and arm strength and physiological variables, resting pulse rate, VO_2 max, anaerobic capacity, and breath holding time.

The purpose of the study was to find out the effects of varied intensities and frequencies of weight training on selected motor ability components and physiological variables among athletes. To achieve the purpose of this study, sixty athletes who represented their schools at Thiruvannamalai District were randomly selected as subjects. The selected subjects' age group was ranging from sixteen to eighteen years. The subjects were randomly divided into three groups and each group consists of twenty subjects. Group one acted as experimental group I and Group two acted as experimental group II and group three acted as control group. Control group was not given any exposure. Experimental Group I underwent low intensity and frequency of weight training and Experimental group II underwent high intensity and frequency of weight training for twelve weeks. Motor fitness variables selected were speed, explosive power, endurance and arm strength. The physiological variables selected were resting pulse rate, VO_2 max, anaerobic power and breath holding time.

The study was formulated as a true random group design, consisting of a pre test and post test. The subjects ($n=60$) were randomly assigned to three equal groups of twenty athletes each. The groups were assigned as Experimental Groups I, II and control group respectively. Pre tests were conducted for all the subjects on selected motor fitness and physiological variables such as speed, explosive power, endurance, arm strength, resting pulse rate, VO_2 max, Anaerobic power and breath holding time. Eight selected weight training exercises were selected for the study and 1 RM

(Repetition Maximum) of the weight training exercises were determined for experimental group subject. The experimental groups participated in their respective high intensity (80% of 1 RM) low frequency (2 days per week) weight training and low intensity (60% of 1 RM) and high frequency (3 days per week) weight training a period of twelve weeks. The post tests were conducted on the above said dependent variables after the experimental period of twelve weeks for all the three groups. The difference between the initial and final scores of the subjects on each variable was the effect of respective treatments. Statistical significance was tested through applying ANCOVA.

5.1.1 LEVEL OF SIGNIFICANCE

The subjects were compared on the effect of varied intensities and frequencies of weight training on selected motor fitness and physiological variables among athletes. The analysis of covariance (ANCOVA) was used to find out the significant difference if any, between the groups on selected criterion variables. In all the cases, 0.05 level of confidence was fixed to test the significance, which was considered as appropriate. In this study, if the obtained F value were greater than the table value, the null hypotheses were rejected to the effect that there existed significant difference among the means of the groups compared and if the obtained values were lesser than the required values at 0.05 level, then the null hypotheses were accepted to the effect that there existed no significant differences among the means of the groups under study.

The findings of this study proved that high intensity low frequency (HILF) and low intensity high frequency (LIHF) treatments for twelve weeks significantly improved motor fitness variables, speed, explosive power, endurance and arm strength and physiological variables resting pulse rate, VO₂ max, anaerobic power and breath holding time.

5.2 CONCLUSIONS

Within the limitations and delimitations of the study, the following conclusions were drawn.

1. It was concluded that varied intensities and frequencies of weight training (HILF and LIHF) significantly improved in selected motor fitness variable such as speed of the athletes compared to control group. And there was no significant difference between experimental groups in altering speed of the athletes.
2. It was concluded that varied intensities and frequencies of weight training (HILF and LIHF) significantly improved in selected motor fitness variable such as explosive power of the athletes compared to control group. And there was no significant difference between experimental groups in altering explosive power of the athletes.

3. It was concluded that HILF and LIHF weight training significantly improved in selected motor fitness variable such as cardiovascular endurance of the athletes compared to control group.
4. It was concluded that varied intensities and frequencies of weight training (HILF and LIHF) significantly improved in selected motor fitness variable such as arm strength of the athletes compared to control group. And there was no significant difference between experimental groups in altering arm strength of the athletes.
5. It was concluded that varied intensities and frequencies of weight training (HILF and LIHF) significantly improved in selected physiological variable such as resting pulse rate of the athletes compared to control group. And there was no significant difference between experimental groups in altering resting pulse rate of the athletes.
6. It was concluded that varied intensities and frequencies of weight training (HILF and LIHF) significantly improved in selected physiological variable such as VO_2 max of the athletes compared to control group. And there was significant difference between experimental groups in altering VO_2 max of the athletes.
7. It was concluded that varied HILF weight training group significantly improved in selected physiological variable such as anaerobic power of the

athletes compared to control group. And there was significant difference between experimental groups in altering anaerobic power of the athletes as HILF weight training group is better than LIHF weight training group.

8. It was concluded that varied intensities and frequencies of weight training (HILF and LIHF) significantly improved in selected physiological variable such as breath holding time of the athletes compared to control group. And there was no significant difference between experimental groups in altering breath holding time of the athletes.

5.3 RECOMMENDATIONS OF THE STUDY

The findings of this study proved that athletes' motor fitness variables, speed, explosive power, endurance and arm strength could be significantly improved through varied intensities and frequencies of weight training exercises which was in agreement with the previous researches. It was also found that varied intensities and frequencies of weight training significantly altered pulse rate, VO_2 max, anaerobic power and breath holding time of athletes. In the light of the above findings, the following recommendations are made.

1. Efforts may be taken to include varied intensities and frequencies of weight training in the physical education curriculum of the college men as it improves overall motor fitness and physiological variables.

2. Efforts may be taken by coaches, sports scientists and educational authorities to include varied intensities and frequencies of weight training schedules of athlete preparation
3. Advantages of varied intensities and frequencies training may be popularized athletes for their all round development of motor fitness and physiological levels.

5.4 SUGGESTIONS FOR FURTHER RESEARCH

1. The effect of varied intensities and frequencies weight training and other training methods on development of motor fitness and physiological variables may be under taken.
2. A similar study may be conducted among college sportsmen to find out the effect of varied intensities and frequencies weight training on their motor fitness levels and skills of the games.
3. A similar research may be undertaken among women athletes.
4. 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 weight training.