CHAPTER – V

SUMMARY, CONCLUSIONS
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5.1. SUMMARY

Sports training is a process of athletic improvement, which is conducted on the basis of scientific principles through which systematic development of mental and physical efficiency, capacity and motivation enables athletes to produce outstanding and record breaking athletic performance. Different activities make different demands upon the organism with respect to the circulatory, respiratory metabolic and neurologic processes which are specific to the activity. Different environmental changes have some close association with the optimal performance of an athlete. To achieve their performance basic physical, physiological and bio-motor fitness is needed.

The purpose of the study was to analyze the effect of a plyometric and resistance training on selected physical, physiological and bio-motor variables among school athletes. To achieve the purpose of the study, forty-five school athletes studying in Campion Anglo-Indian Higher Secondary School, Tiruchirappalli, Tamilnadu, India were selected as subjects. The age, height and weight of the subjects ranged from 15 to 17 years, 160 to 175 centimeters and 45 to 60 kilograms respectively. The selected subjects were medically examined by a qualified physician and certified that they were medically and physically fit enough to undergo the training programme. The selected subjects (N=45) were classified into three equal groups of fifteen each (n=15) at random. Group I underwent plyometric training, group II underwent resistance training and group III acted as control.
The experimental design used in this study was random group design involving 45 subjects, who were divided at random into three group of fifteen each. All the three groups were selected from the same population. No effort was made to equate the groups prior to the commencement of the experimental treatment. The pre-test means of the selected dependent variable was used as a covariate. In order to nullify the initial differences the data collected from the three groups prior to and post experimentation on selected dependent variables were statistically analyzed to find out the significant difference if any, by applying the analysis of covariance (ANCOVA). Since three groups were involved, whenever the obtained ‘F’ ratio for adjusted post-test means was found to be significant, the Scheffe’s test was applied as post-hoc test to determine the paired mean differences. In all the cases the level of confidence was fixed at 0.05 for significance.

5.2. CONCLUSIONS

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

5.2.1. Speed

The present result of the study stated that both plyometric and resistance training groups had significant improvement on speed comparing to the control group. However, there was no significant difference existed between plyometric training and resistance training on speed.

5.2.2. Leg Strength

The result of the study stated that both plyometric and resistance training groups had significant improvement on leg strength comparing to the control group.
However, the resistance training group is better than the plyometric training group to increase the leg strength of the subjects.

5.2.3. Cardio-Respiratory Endurance

The present result of the study stated that both plyometric and resistance training groups had significant improvement on cardiorespiratory endurance comparing to the control group. However, the plyometric training group is better than the resistance training group to increase the cardiorespiratory endurance of the subjects.

5.2.4. VO$_2$ Max

The result of the study stated that both plyometric and resistance training groups had significant improvement on VO$_2$ Max comparing to the control group. However, there was no significant difference existed between plyometric training and resistance training on VO$_2$ Max of the subjects.

5.2.5. Vital Capacity

The result of the study showed that both plyometric and resistance training groups had significant improvement on vital capacity comparing to the control group. However, there was no significant difference existed between plyometric training and resistance training on vital capacity of the subjects.

5.2.6. Agility

The present result of the study stated that both plyometric and resistance training groups had significant improvement on agility comparing to the control group. However, there was no significant difference existed between plyometric training and resistance training on agility of the subjects.
5.2.7. Reaction Time

The present result of the study stated that both plyometric and resistance training groups had significant improvement on reaction time comparing to the control group. However, there was no significant difference existed between plyometric training and resistance training on reaction time of the subjects.

5.3. RECOMMENDATIONS

The following recommendations have been made based on the results of the study.

1. For the development of physical fitness parameters, plyometric and resistance training can be executed. Based on the outcome of the study, the investigator recommended that the plyometric and resistance training can be given to athletes, in order to improve their physical fitness.

2. The study also found that plyometric and resistance training induced changes on the selected physiological parameters of the experimental groups significantly. Therefore, this type of information is helpful for the coaches to draw individualized training programme to improve the physiological parameters.

3. To improve biomotor variables under plyometric and resistance training may be given.

4. The impact of plyometric and resistance training may be compared with other training methods.

5. Research may also be conducted to explore the detraining effect of plyometric and resistance training.

6. It is recommended that further research be designed to investigate the effects of plyometric and resistance training in an elite population.
7. Future studies are needed to determine the optimal levels for the amount, type and frequency of individual training sessions and duration of prolonged plyometric and resistance to improve metabolic health in obese individuals or in individuals with metabolic syndrome.