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Combined effect of anaerobic and interval training on inspiratory reserve volume and expiratory reserve volume among volleyball players

Dr. R Thanalakshmi**Abstract**

The purpose of the study was to assess the combined effect of anaerobic and interval training on inspiratory reserve volume and expiratory reserve volume among volleyball players. To achieve the purpose of the study, thirty college volleyball players from Aditanar Educational Institutions, Tiruchendur, Tuticorin, Tamil Nadu, India were selected as subjects. They have participated in the intercollegiate tournaments for their respective, affiliated university of Manonmaniam Sundaranar University intercollegiate volleyball tournaments and Tamil Nadu Physical Education and Sports University intercollegiate volleyball tournaments. Their age ranged from 18 to 25 years. The thirty subjects were divided into two groups of fifteen (15) subjects each. Group I underwent combined training (anaerobic and interval training), group II acted as control they did not participating any activities. Experimental group have training programmes for 12 weeks in alternative days. For that purpose, the inspiratory reserve volume and expiratory reserve volume selected as dependent variables for this study. Inspiratory reserve volume and expiratory reserve volume measured by spirometry test. Analysis of Covariance (ANCOVA) was applied as statistical tool for the present study. Significant at 0.05 level of significance. The data were examined by applying SPSS measurable package in the computer. The results of the study shows that combined training group have improved their inspiratory reserve volume and expiratory reserve volume compared with control group.

Keywords: Anaerobic training, interval training, inspiratory reserve volume, expiratory reserve volume and volleyball

Introduction

Anaerobic training is any exercise difficult enough to produce lactic acid in the body. Bodybuilders utilise it to bulk up their muscles, while athletes competing in non-endurance sports use it to increase their strength, speed, and power. Anaerobic exercise improves performance during short-duration, high-intensity workouts that can last anywhere from a few seconds to up to two minutes because it causes the muscular energy systems to develop differently than aerobic exercise.

Anaerobic training consists of quick strength-based workouts like sprinting or bodybuilding, whereas aerobic exercise is concentrated on endurance exercises like marathon running or long distance cycling. But every activity begins anaerobically. Anaerobic workouts include things like jogging, lifting weights, and jumping. Quick, high-intensity movements are a part of anaerobic activities.

Anaerobic activities refer to those that are quick, intense, and push the body to its absolute limit. Such an exercise mechanism enables the body to do heavy or difficult motions that are ordinarily impossible, but they cannot be sustained for an extended period of time. During interval training, a form of physical exercise, high- and low-intensity work bursts alternate with intervals of low-intensity effort. The high-intensity phases are typically at or very close to peak effort, whereas the recovery phases might comprise either total rest or low-intensity activity. Interval training, a common practise in many sports training regimens, is the structuring of any cardiovascular workout (for instance, cycling, running, rowing, etc.). Although this kind of training is thought to be used most frequently by runners, athletes from a variety of sports and backgrounds have also been observed using it.

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A high net is used in the game of volleyball, which is played between two teams of six players each. You need to get the ball to touch the court inside of your opponent's playing area before you may return it. Before the ball strikes the court, a player of the other team knocks it up and toward a teammate to stop this from happening. Upon reaching the other side of the net, that teammate has two options: volley the ball or bat it to a third teammate who will do the same. Only three touches of the ball are permitted for each team before the ball must be returned over the net.

Statement of the Problem

The purpose of the study was to assess the combined effect of anaerobic and interval training on inspiratory reserve volume and expiratory reserve volume among volleyball players.

Methodology

To achieve the purpose of the study, thirty college volleyball players from Aditanar Educational Institutions, Tiruchendur, Tuticorin, Tamil Nadu, India were selected as subjects. They have participated in the intercollegiate tournaments for their respective, affiliated university of Manonmaniam Sundaranar

University intercollegiate volleyball tournaments and Tamil Nadu Physical Education and Sports University intercollegiate volleyball tournaments. Their age ranged from 18 to 25 years. The thirty subjects were divided into two groups of fifteen (15) subjects each. Group I underwent combined training (anaerobic and interval training), group II acted as control they did not participating any activities. Experimental group have training programmes for 12 weeks in alternative days. For that purpose, the inspiratory reserve volume and expiratory reserve volume selected as dependent variables for this study. Inspiratory reserve volume and expiratory reserve volume measured by spirometry test.

Analysis of data

Analysis of Covariance (ANCOVA) was applied as statistical tool for the present study. Significant at 0.05 level of significance. The data were examined by applying SPSS measurable package in the computer. The pre and post test data collected from the experimental and control groups on inspiratory reserve volume and expiratory reserve volume were statistically analyzed by ANACOVA and the results are presented in Table 1.

Table 1: ANACOVA and result

Variable Name	Group Name	Combined Training Group	Control Group	F ratio
Inspiratory reserve volume	Pre-test Mean \pm S.D	2.62 \pm 1.32	2.63 \pm 1.82	0.996
	Post-test Mean \pm S.D.	2.64 \pm 0.85	2.69 \pm 1.52	07.44*
	Adj. Post-test Mean \pm S.D.	2.65	2.68	101.16*
Expiratory reserve volume	Pre-test Mean \pm S.D	2.54 \pm 1.40	2.54 \pm 1.65	0.917
	Post-test Mean \pm S.D.	2.56 \pm 1.45	2.64 \pm 1.99	8.94*
	Adj. Post-test Mean \pm S.D.	2.54	2.56	55.29*

*(The required table value for significance at 0.05 level of confidence with degrees of freedom 1 and 27 is 4.21 and degree of freedom 1 and 28 is 4.20.)

*Significant at .05 level of confidence

The obtained 'f' ratio value is 7.44 of inspiratory reserve volume was greater than the required table value of 4.21 for the degrees of freedom 1 and 27 at 0.05 level of confidence. Hence it was concluded that due to the effect of twelve weeks of combined anaerobic and interval training improved inspiratory reserve volume of the subjects was significantly.

The obtained 'f' ratio value is 8.94 of expiratory reserve volume was greater than the required table value of 4.21 for the degrees of freedom 1 and 27 at 0.05 level of confidence. Hence it was concluded that due to the effect of twelve weeks of combined anaerobic and interval training improved expiratory reserve volume of the subjects was significantly.

Conclusions

Based on the results of this study the following conclusions were drawn by the investigator. It was concluded that the selected criterion variables such as inspiratory reserve volume and expiratory reserve volume were significant difference between combined training group and control group of men volleyball players.

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