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Combined effect of anaerobic and interval training on agility and flexibility among volleyball players

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Abstract

The purpose of the study was to assess the combined effect of anaerobic and interval training on agility and flexibility 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 agility and flexibility selected as dependent variables for this study. Agility and flexibility measured by shuttle run and sit and reach 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 agility and flexibility compared with control group.

Keywords: Anaerobic training, interval training, agility, flexibility and volleyball

Introduction

Any activity that is strenuous enough to cause lactic acid to develop is considered anaerobic training. It is used by bodybuilders to add muscular bulk and by competitors in non-endurance sports to enhance strength, speed, and power. Anaerobic exercise causes the muscle energy systems to develop differently from aerobic exercise, resulting in improved performance during short-duration, high-intensity exercises that can last anywhere from a few seconds to up to two minutes. While aerobic exercise is focused on endurance activities like marathon running or long distance cycling, anaerobic training involves fast strength-based routines like sprinting or bodybuilding. But anaerobic processes start off every action. Exercises that need anaerobic energy include running, lifting weights, and leaping. Anaerobic exercises include quick, intense motions. Activities that are rapid, intense, and strain the body to the utmost limit are said to as anaerobic. Although the body may do heavy or difficult actions that would otherwise be impossible thanks to this workout mechanism, they cannot be sustained for a lengthy amount of time.

Interval training is a sort of physical exercise that alternates high-intensity work bursts with low-intensity work intervals. While the recovery intervals may entail either full rest or activities of reduced intensity, the high intensity phases are often at or close to near maximum effort.

Interval training, which is common in many sports training programmes, may be defined as the structuring of any cardiovascular activity (for instance, cycling, running, rowing, etc.). Although athletes from all backgrounds have been known to use this sort of training, runners are reported to do it most frequently.

A high net is used in the game of volleyball, which is played by two teams with typically six players per team. The goal is to get the ball to touch the court inside your opponent's playing area before you can return it. Before the ball reaches the court, a player on the other team bats it up and toward a teammate to stop this from happening.

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That teammate can then volley the ball across the net or bat it to a third teammate who will do the same. Only three touches of the ball are permitted per 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 agility and flexibility 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 agility and flexibility selected as dependent variables for this study. Agility and flexibility measured by shuttle run and sit and reach 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 agility and flexibility were statistically analyzed by ANACOVA and the results are presented in table-I.

Table 1: The pre and post test data collected from the experimental and control groups on agility and flexibility were statistically analyzed by ANACOVA

Variable Name	Group Name	Combined Training Group	Control Group	F ratio
Agility	Pre-test Mean \pm S.D	10.02 \pm 1.12	10.03 \pm 1.07	0.787
	Post-test Mean \pm S.D.	8.86 \pm 1.15	10.01 \pm 1.06	13.96*
	Adj.Post-test Mean \pm S.D.	9.02	10.02	45.98*
Flexibility	Pre-test Mean \pm S.D	7.68 \pm 0.83	7.71 \pm 0.73	0.987
	Post-test Mean \pm S.D.	9.58 \pm 0.93	7.69 \pm 0.85	11.26*
	Adj.Post-test Mean \pm S.D.	9.02	7.70	58.72*

* (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 13.96 of agility 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 anaerobic and interval training improved agility of the subjects was significantly.

The obtained 'f' ratio value is 11.26 of flexibility 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 flexibility 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 agility and flexibility were significant difference between combined training group and control group of men volleyball players.

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