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ISOLATED AND COMBINED EFFECT OF AEROBIC TRAINING AND CIRCUIT TRAINING ON ATTACKING PERFORMANCE OF WOMEN VOLLEYBALL PLAYERS

Physical Education

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ABSTRACT

The purpose of the study was to analyze the effect of Isolated and combined effect of aerobic training and circuit training on attacking performance of women volleyball players. To achieve the purpose of the study, sixty women. Inter collegiate level volleyball players studying at various colleges at Kalasalingam Educational Institutions, krishnankoil, Tamilnadu, were selected as subjects. The age of the subjects ranged from 18 to 23 years. The selected subjects were randomly assigned into four equal groups of fifteen each (n=15) at random. Group-I underwent combined circuit and aerobic raining, group-II underwent circuit training, group-III underwent Aerobic training and group- IV acted as control group. Subjective rating method was utilized to assess the attacking performance of women volleyball players. The data collected from the four groups prior to and post experimentation were statistically analyzed by analysis of covariance (ANCOVA). Since four groups were involved, whenever 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. The experimental groups had significant improvement on attacking performance when comparing to the control group.

KEYWORDS

Aerobic Training, Circuit Training, Combined Training and Attacking performance.

INTRODUCTION

Sports training are the basic form of an athlete's training. It is the preparation systematically organized with the help of exercises which in fact is a pedagogically organized process of controlling the development of an athlete (Howard and Rosemary,1981). High sports performance through sports training can be achieved by a scientific and systematic use of training means. Training means are various physical exercises and other objects, methods and procedure which are used for the improvement maintenance and recovery of performance capacity and performance readiness (Singh,1991).

It is important to know how aerobic training influences adaptations in motor ability components and physiological parameters when selecting an optimum training regimen for a specific sport or for improving fitness in the general community. Pate and Kriska, (1984) have described a model that incorporates the three major factors accounting for inter individual variance in aerobic endurance performance: maximal oxygen uptake (Vo_2max), lactate threshold (LT), and work economy.

Circuit training maximizes the total exercise volume (number of sets, repetitions, and amount of weight) completed in a period of time. Exercises are completed in a row, and therefore, the time spent exercising is condensed. A circuit training session can be developed to meet their specific needs.. The ability of the body to resist the stresses that can result from an injury can be increased by obtaining a greater amount of strength. Circuit training helps women to achieve their goals and maintain them longer than other forms of exercise or diet. Circuit training is well-suited for developing strength endurance or local muscular endurance. It is less suitable for building muscle bulk and despite some potential strength gains, circuit training is going to provide less results in the way of maximal strength than outright weight training.

METHODOLOGY

Subjects and Variable

The purpose of the study was to analyze the effect of Isolated and combined effect of Aerobic training and Circuit training on attacking performance of women volleyball players. To achieve the purpose of the study, sixty women volleyball players studying at various colleges at Kalasalingam Educational Institutions, krishnankoil, Tamilnadu were selected as subjects. The age of the subjects ranged from 18 to 23 years. The selected subjects were randomly assigned into four equal groups of fifteen each (n=15) at random. The selected subjects were randomly assigned into four equal groups of fifteen each (n=15) at random. Group-I underwent combined raining, group-II underwent circuit training, group-III underwent Aerobic training and group- IV acted as control group. The experimental group I, II, III performed combined circuit and aerobic raining, circuit training and aerobic training respectively on alternate days for a period of eight weeks only in morning session in between 6.30 am to 8.00 am under the personal supervision of the researcher. Subjective rating method was utilized to assess the attacking performance of women volleyball players. The experimental group II performed the following exercises. They are Squat Jump, Push-Ups, Burpees, Sit ups, Skipping, Squat Thrusts, Treadmills, and Crunch. The aerobic exercises selected for experimental group III are Forward and backward stepping, V, T, L, Grape, V and intensity Jumps, Bouncing, Diamond, Leg curl, Squat, and Jump Jack. . Every week the work out sequence was increased as per the principles of load progression.

Statistical Technique

The data collected from the four groups prior to and post experimentation were statistically analyzed by analysis of covariance (ANCOVA). Since four groups were involved, whenever 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. The level of significant was fixed at 0.05.

ANALSIS OF DATA

TABLE-I

ANALYSIS OF COVARIANCE ON ATTACKING PERFORMANCEOF EXPERIMENTAL AND CONTROL GROUPS

	Combined Training	Circuit Training	Aerobic Training	Control Group	SOV	Sum of Squares	Df	Mean Squares	'F' ratio
Pre Test Mean SD	3.46	3.37	3.43	3.45	B	0.07	3	0.024	0.36
	0.27	0.24	0.24	0.25	W	3.60	56	0.064	
Post Test Mean SD	8.08	6.92	6.84	3.47	B	177.80	3	59.26	230.55*
	0.47	0.58	0.62	0.25	W	14.39	56	0.25	
Adjusted Post Test Mean	8.09	6.91	6.84	3.47	B	177.69	3	59.23	226.73*
					W	14.36	55	0.26	

Significant at .05 level of confidence

(The required table value for significance at 0.05 level of confidence with degrees of freedom 3 and 55 is 2.77 and degree of freedom 3 and 56 is 2.77)

The adjusted post test means on attacking performance of combined training, circuit training, aerobic training groups and control groups are 8.09, 6.91, 6.84 and 3.47 respectively. The obtained 'F' ratio value of 266.73 on attacking performance were greater than the required table value of 2.77 for the degrees of freedom 3 and 55 at 0.05 level of confidence. It is observed from this finding that significant differences exist among the adjusted post test means of experimental and control groups on attacking performance.

Since, the adjusted post test 'F' ratio value is found to be significant the Scheffe's test is applied as post hoc test to determine the paired mean differences, and it is presented in table-II.

TABLE-II

SCHEFFE'S TEST FOR THE DIFFERENCE BETWEEN THE ADJUSTED POST TEST PAIRED MEANS OF ATTACKING PERFORMANCE

Adjusted Post Test Means	DM	CI			
Combined Training	Circuit Training	Aerobic Training	Control Group		
8.09	6.91			1.18	0.37
8.09		6.84		1.25	0.37
8.09			3.47	4.62	0.37
	6.91	6.84		0.07	0.37
	6.91		3.47	3.44	0.37
		6.84	3.47	3.37	0.37

***Significant at .05 level of confidence**

Table-II shows the Scheffe's test results that there are significant differences between the adjusted post tests means of combined training and circuit training groups; combined training and aerobic training groups; combined training and control group; circuit training and control group; aerobic training and control group on attacking performance. The result also showed that there is no significant difference between the adjusted post tests means of circuit training and aerobic training groups on attacking performance.

CONCLUSION

It had been concluded from the investigation that the combined training improved the attacking performance of women volleyball players when compare to those of other experimental groups such as aerobic training and circuit training groups. But no significant difference was found between circuit training and aerobic training groups on attacking performance. However, the attacking performance of all experimental groups improved due to the effect of eight weeks of combined training, circuit training and aerobic training.

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