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Effect of specific training programme on aerobic capacity among Annamalai university kabaddi players

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Abstract

The purpose of the study was to find out the effect of specific training on aerobic capacity among Annamalai university netball players. To achieve this purpose of the study, thirty men kabaddi players were selected as subjects who were from the various faculties, Annamalai University, Annamalainagar. The selected subjects were aged between 19 to 24 years. They were divided into two equal groups of fifteen each, Group I underwent specific training and Group II acted as control that did not participate in any special training apart from their regular sports and games practices. The subjects were tested on selected criterion variables such as aerobic capacity prior to any immediately after the training period. The selected criterion variable such as agility was measuring by Yo-Yo intermittent recovery test. The analysis of covariance (ANCOVA) was used to find out the significant differences if any, between the experimental group and control group on selected criterion variable. The 0.05 level of confidence was fixed to test the significance, which was considered as an appropriate. The result of the present study has revealed that there was a significant difference among the experimental and control group on aerobic capacity.

Keywords: Specific training–aerobic capacity-kabaddi

1. Introduction

The primary objective of sports training is to stress various bodily systems to bring about positive adaptation in order to enhance sporting performance. To achieve this objective, coaches and athletes systematically apply a number of training principles including overload, specificity and progression, organized through what is commonly termed periodization. The application of these principles involves the manipulation of various programme design variables including choice of exercise, order of training activities/exercises, training intensity (load and repetition), rest periods between sets and activities/exercises and training frequency and volume in order to provide periods of stimulus and recovery, with the successful balance of these factors resulting in positive adaptation ^[1]. Sport specific training is simply fitness and performance training designed specifically for athletic performance enhancement. Training programs for athletic performance enhancement could include such areas as strength, speed, power, endurance, flexibility, mobility, agility, mental preparedness (including goal setting), sleep, recovery/regeneration techniques and strategies, nutrition, rehabilitation, pre-habilitation, and injury risk reduction. A general program should include all of these components and a more specific program may only include a few, depending upon the athlete's specific needs (based on strengths, weaknesses and/or imbalances) and the demands of the sport they participate in ^[2]. While there may be some sense of specificity to a program designed for an athlete of a specific sport, the truth is that there is a limit to the amount of application/carryover of a sports performance exercise to a sports skill. The most sports specific training that can be done is the sport itself. Sports specific skills practiced for the sport are as specific as one can get. Take Ice Hockey, for example: there are no exercises that can be performed in the weight room that are more specific to hockey than skating on the ice. The same is true for shooting the puck. However, while there are sports specific skills necessary for each sport, there are also physical skills necessary for each sport. Sports preparation is necessary for the sport specific skills (shooting a basketball, pitching a baseball, etc.) and physical preparation is needed for specific performance enhancement such as foot speed, strength, power, etc ^[3].

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1.1 Objectives of the study

The main objective of the study was to assess the effect of specific training on aerobic capacity which would help to enhance physical fitness of kabaddi players. The present study was designed to obtain the data on the men players from various faculties of Annamalai University, Annamalainagar.

1.2 Statement of the problem

The purpose of the study was to determine the effect of specific training programme on aerobic capacity among Annamalai university kabaddi players.

1.3 Delimitations

1. The study was delimited to Annamalai University, Annamalai nagar.
2. The study was delimited to 30 netball players, their age was 19 to 24 years.
3. The study was restricted to the dependent variable is aerobic capacity and independent variables are specific training.

1.4 Significance of the Study

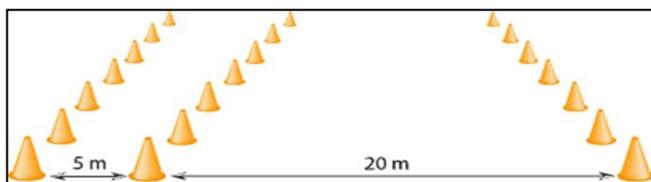
1. The findings of the study may be helpful for university kabaddi players to apply specific training which will help in better health and fitness.
2. The findings of the study would be helpful for the trainers to know the role of aerobic capacity influence their physical fitness.
3. The results of the study may be helpful to fitness trainers, coaches, physical educationist and exercise physiologists to design proper training protocol for other populations.

2. Methodology

In the present study all the students studying in various faculties, Annamalai University, Annamalainagar were considered as population for the study. A representative sample of 30 kabaddi players in the age of 19-24 years was chosen as sample for the study. The selected participants were divided into two groups. Group I underwent specific training and group II act as control group. The experimental groups underwent eight weeks of training in their particular workout. For this study dependent variable is aerobic capacity.

2.1 Test Administration–Yo-Yo intermittent recovery test

The Yo-Yo Intermittent Tests are similar to the yo-yo endurance test (a variation of the beep test) except in the intermittent tests the participants have a short active break (5 and 10 seconds for the *intermittent endurance* and *intermittent recovery* test, respectively). There are two versions of each Yo-Yo Intermittent Test, a beginners Level 1 and advanced level 2 (see details of the speeds and levels for the yo-yo intermittent recovery test and yo-yo intermittent endurance test). The Yo-Yo tests can be performed using the team beep test software.



Fig

Purpose: The test evaluates an individual's ability to repeatedly perform intervals over a prolonged period of time,

particularly for athletes from sports such as tennis, team kabaddi, basketball and soccer or similar sports.

Procedure: Use cones to mark out three lines as per the diagram above; 20 meters and 2.5 (endurance test) or 5 meters (recovery test) apart. The subject starts on or behind the middle line, and begins running 20 m when instructed by the cd. This subject turns and returns to the starting point when signaled by the recorded beep. There is a active recovery period (5 and 10 seconds respectively for the endurance and recovery versions of the test) interjected between every 20 meter (out and back) shuttle, during which the subject must walk or jog around the other cone and return to the starting point. A warning is given when the subject does not complete a successful out and back shuttle in the allocated time, the subject is removed the next time they do not complete a successful shuttle.

Variations: for each of the recovery and endurance intermittent tests there are two levels: level 1 designed for lesser trained individuals and level 2 aimed at well trained and elite athletes and starting at a faster speed. Both test variations have increasing speeds throughout the test.

Scoring: The athlete's score is the total distance covered before they were unable to keep up with the recording. The Yo-Yo intermittent test usually takes between 6-20 minutes for level 1 and between 2-10 minutes for level 2. For more details see the speeds and distances for the Yo-Yo *intermittent endurance* and Yo-Yo *intermittent recovery* test. There has been formula published for estimating VO₂ max (ml/min/kg) from the Yo-Yo IR1 and IR2 test results.

Yo-Yo IR1 test: $VO_{2max} (mL/min/kg) = IR1 \text{ distance (m)} \times 0.0084 + 36.4$

Yo-Yo IR2 test: $VO_{2max} (mL/min/kg) = IR2 \text{ distance (m)} \times 0.0136 + 45.3$

2.2 Analysis of Data

The data obtained were analyzed by analysis of covariance (ANCOVA). Analysis of covariance was computed for any number of experimental groups, the obtained 'F' ratio compared with critical F value for significance ^[4].

3. Results

The statistical analyses of agility due to specific training have been presented in Table I.

Table 1

		Specific Training Group	Control Group	F ratio
Pre Test	Mean	1550	1500	1.28
	S D	2.45	2.33	
Post Test	Mean	1800	1550	7.25*
	S D	2.87	2.41	
Ad Post Test	Mean	1820	1540	32.48*

The table I shows that the pre-test means of specific training group and control group are 1550 ± 2.45 and 1500 ± 2.33 respectively. The obtained 'F' ratio of 1.28 for pre-test means of aerobic capacity was not significant at .05 levels indicating that the two groups were no significant variation. The post-test means of specific training group and control group are 1800 ± 2.87 and 1550 ± 2.41 respectively. The obtained 'F' ratio of 7.25 for post-test means of aerobic capacity was a

significant at .05 levels indicating that the two groups were significant variation. The adjusted post-test means of specific training group and control group are 1820 and 1540 respectively. The obtained 'F' ratio of 32.48 for adjusted post-test means of agility was significant at .05 level. The results of the study indicate that there is a significant difference among specific training group and control group on aerobic capacity.

4. Discussion/Conclusions

The results of the study proved that there were significant differences between control group and specific training group. The eight weeks of experimental treatment significantly influence on aerobic capacity in university netball players. The above results are supported by Cosio-Lima^[5], Willardson^[6] and Stanton, Reaburn and Humphries^[7].

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