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Efficacy of parachute training on selected speed parameters of kho kho players

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Abstract
The purpose of the study was to find out the effect of parachute training on speed and agility of college level kho kho players, (forty N=30) from Calicut district were selected randomly as subjects. The age of the subjects ranged from 18-22 years. The selected subjects was randomly divided into two groups experimental and control group. Experimental group underwent parachute training for twelve weeks of three different days. Control group who were not engaged in any specific activities other than daily routine. The selected criterion variables such as speed and agility were assessed by using the standardized test. The random group experimental design was used for this study. The pre and post test data was collected prior and immediately after the twelve weeks of training period. The data was statistically analyzed with Dependent't" test and analysis of covariance (ANCOVA). In all the cases 0.05 levels was fixed as level of confidence to test the hypotheses. The result of the study proved that there was significant improvement on speed and agility due to parachute training of college level kho kho players. The results indicates that, there was significant differences between experimental and control group after the training programme.

Keywords: parachute training, speed and agility

Introduction

In sports parachute for use in speed and endurance enhancement training for athletes particularly runners, or those who engaged in professional sports the parachute is provided a high resistance training. The chute provides progressive **r**esistance, meaning the faster run, the more it drags. So no matter how fast run, it provides enough resistance to increase strength. Wind-resistance training with speed chutes provides overall muscular resistance. Speed chutes build fast-twitch muscles. Building strength translates into a better overall athletic performance. Wind-resistance training with speed chutes provides overall muscular resistance Tudor *et al*., (1999) [6].

Speed may be the most exciting ingredient in sport. It requires rapid acceleration, which involves the contraction of fast-twitch muscle fibers. Speed of movement includes reaction time and movement time. Reaction time (the time from the stimulus, such as a starting gun, until the beginning of the movement) is a function of the nervous system. We can't change the speed of nerve impulse transmission along a neuron (Singh, 1991) [5].

Agility is the ability of an individual to react to changes in direction without loss of speed or accuracy. The expression that someone can "stop on a dime" describes the ability of an athlete to sprint at maximal velocity and rapidly change direction without any reduction in speed. It requires a combination of strength, power, balance and coordination to change from a moment performed at a maximal velocity decelerate as quickly as possible with a new moment. (Weinberg *et al*., 1995) [7].

Statement of the Problem

The purpose of the study was to find out the effect of parachute training on speed and agility of kho kho players.

Hypotheses

1. There would be significant improvement on speed of kho kho players due to twelve weeks of parachute training.
2. There would be significant improvement on agility of kho kho players due to twelve weeks of parachute training.

Materials and Methods

The investigator randomly selected Thirty (N=30) state level male kho kho players from Calicut, Kerala. The selected subjects were divided into two equal groups of fifteen (n=15) each, experimental group I (n=15) and the group II was control group (n=15). The age group of the subjects ranged between 18-22 years. The criterion variable selected were speed and agility. 50 meter dash used to measured speed and shuttle run test was used to measured agility of kho kho players.

Training Intervention

The training programme was scheduled for one session per day. The experimental group underwent parachute training thrice in a week on Mondays, Wednesdays and Fridays for a period of twelve weeks. The parachute training programme consisted of warm up and stretching for 10-15 minutes, selected parachute exercises for 35-40 minutes and 5-10 minutes of warm down. The initial intensity was fixed at 65% and 5% rule was applied to increase intensity in every three weeks.

Statistical Analysis

Descriptive statistics were derived for all test variables using SPSS (20). Changes in speed and agility between the groups were assessed by using paired sample "t" test and analysis of covariance (ANCOVA). The level of confidence was fixed at 0.05 to test the significance.

Results and Discussions

Table 1: Descriptive Statistics and Paired Sample't' and 'F' Value on Speed and Agility of Experimental and Control Groups

Variables	Group	Pre-test Mean	Post-test Mean	't' value	F ratio
Speed	Experimental	8.67	8.65	3.38*	8.90*
	Control	8.68	8.67	0.19	
Agility	Experimental	11.29	11.27	3.56*	7.80*
	Control	11.28	11.27	1.76	

*Significant at 0.05 level. (df 14 is 2.14) (FA, 1, 27) = 4.21)

Table 1 indicates that, there was a significant difference between the pre and post test score on speed and agility of experimental group, since the calculated t value of 3.38* and 3.56* is higher than the tabulated t value of 2.14 at 0.05 level of significance with 14 degree of freedom. In the control group there was no significant deference between pre and post-test on speed and agility since the calculated t value of 0.19 and 1.76 is lower than the tabulated t value of 2.14 at. 05 level of significance with 14 degree of freedom. As seen from table 1, the F ratio obtained for speed and agility was 8.90* and 7.80* which was higher than F ratio of 4.21 required for significance at 0.05 level, thereby indicating significant differences in post adjusted values for speed and agility between the experimental and control groups**.**

Table 2: Pair Wise Comparison of Post Adjusted Group Means on Speed and Agility of the Experimental and Control Groups

Variables	Experimental Group	Control Group	Mean Difference	Standard error	Significance
Speed	11.28	11.29	0.01	.007	0.00
Agility	1.87	1.84	0.03	.006	0.00

The above table of comparison of post adjusted group means for the experimental and control groups on speed and agility indicates significance difference between the experimental and control groups. The experimental group showed significant increase in speed and agility from pre-test to post-test value following parachute training programme as compared to control group.

Discussion on Findings

On the basis of the result it was conducted that the effect of parachute training significantly improved the selected speed parameters namely speed, agility of kho kho players.

Parachute training focuses on challenging the central nervous system and creates a better mind-muscle connection. Therefore the change in outcome requires a change in the athlete's mind set. Speed, agility and quickness training are all interrelated as they fall under the category of neuromuscular training. (Brown, 2000) [2].

The reasons for improvement might be due to the application of Speed-agility-quickness training on the treatment groups. As kho kho is a game of 20% aerobic and 80 % anaerobic in nature (Brittenham G, 1996) [1], the role of parachute training seems very vital. The nature of parachute training programme has the potentiality to blend top speed, rapid change of direction, explosive movement and lighting fast response i.e. all the qualities that the top kho kho players need to possess today. In such an intermittent game lateral, linear or vertical movement skills make a champion (Dobbins, 2009).

The essential physical skills for kho kho players are strength, speed, flexibility and agility. The training and evaluation of those four physical skills are especially important in the off-season and pre-season periods when athletes are concentrating on overall improvement. Training programs can positively affects several skills e.g. improvement in leg strength and flexibility will almost certainly improve speed and jumping ability (Brzycki, 2008) [3].

It was concluded from the results of the study systematically designed parachute training may be given in the training programmes of all the disciplines in order to achieve maximum performance. From the result of the present investigation, it is concluded that significant difference exists between experimental and control group in developing selected criterion variables.

Conclusions

1. There was a significant improvement on speed of the kho kho players due to twelve weeks of parachute training.
2. There was a significant improvement on agility of the kho kho players due to twelve weeks of parachute training.
3. The control group did not show any significant improvement on speed and agility.

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