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EFFECT OF JUMP ROPE TRAINING ON SPEED AND EXPLOSIVE POWER AMONG INTER COLLEGIATE STUDENTS

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ABSTRACT

The purpose of the study was to find out the effect of Jump Rope Training on Speed and Explosive Power among Inter Collegiate Students. Twenty four male students studying from Dr. Sivanthi Aditanar College of Physical Education, Tiruchendur were selected randomly as subjects. The age of the subjects ranged from 21 to 28 years. The selected subjects were divided into two groups. Group I underwent Jumpe Rope training and Group II acted as control. The experimental group was subjected to the Jump Rope training for alternative three days per week up to six weeks. The Jump Rope training was selected as independent variable and the criterion variables Speed and Explosive Power were selected as dependent variables and the selected dependent variables were assessed by the standardized test items. Speed was assessed by 50m run and the unit of measurement in seconds, explosive power was assessed by vertical jump test and the unit of measurement in centimeters. The experimental design selected for this study was pre and post test randomized design. The data were collected from each subject before and after the training period and statistically analyzed by using dependent 't' test and analysis of covariance (ANCOVA). It was found that there was a significant improvement and significant different exist due to the effect of jump rope training on speed and explosive power among inter collegiate students when compared to control group

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INTRODUCTION

Rope jumping was probably introduced by America in the 1600s by the Dutch settlers of New Amsterdam (modern-day New York). It may surprise you that for a long time rope jumping were strictly a boy's activity, at least in western cultures. In fact, young girls were warned not to undertake such strenuous activity lest their blood vessels would burst! Fortunately, around the turn of the century females realized that some one was pulling the wool over their eyes and began rope jumping with a vengeance. **(Buddy Lee., 2003)**

The sports training potential of rope jumping has long been under estimated, and jumping has been used to its full potential in only a few sports: boxing, wrestling, tennis and martial arts. Many coaches of other sports encourage jump rope training for their athletes but are not sure how to use it to meet the unique training demands of their sport. When done properly, jump rope training can lead to dramatic improvements in sports performance. **(Buddy Lee., 2003)**

Rope jumping requires the co-ordination of several muscle groups to sustain the precisely timed and rhythmic movements that are integral to the exercise. It's the coordination of these muscle groups that increases the athlete capacity for dynamic balance the ability to maintain equilibrium while executing complex, vigorous, and omni directional movements. **(Buddy Lee., 2003)**

Rope jumping increases dynamic balance because the athlete must make numerous neuromuscular adjustments to the imbalance created by each of the hundreds of jumps per training session. These adjustments also force the athlete to balance the body weight on the balls of the feet, reinforcing the universal athletic position. The universal athletic position is a standing position of readiness that allows the athlete to react quickly in any direction and then move back to the starting position. **(Buddy Lee., 2003)**

Speed can be defined as quickness over a sustained period of time. It's speed that allows an athlete to maintain and build on slight advantages in distance and time or to close disadvantage in distance and time. Speed can be increased and extended by forcing the anaerobic energy system to operate at progressively greater levels of intensity for longer periods of time. My sprint program will increase speed by challenging the athlete's anaerobic energy system sustain maximum anaerobic

intensity for up to two minutes. This will prepare the athlete for the anaerobic demands of most sports. **(Buddy Lee., 2003)**

Explosiveness is the spark of force that triggers speed. It can be described as force plus quickness. Explosiveness is critical for athletes who must rapidly reach their sprint speed to achieve or sustain a competitive advantage. My power programs are especially designed to help athletes generate and project explosiveness in to critical movements of their sport. **(Buddy Lee., 2003)**

METHODOLOGY

To achieve the purpose, twenty four men atheletes studying from Dr. Sivanthi Aditanar College of Physical Education, Tiruchendur were selected randomly as subjects. The age of the subjects ranged from 21 to 28 years. They were assigned randomly into two groups (group I) underwent jump rope training and (group II) acted as control of twelve subjects each. The experimental group was subjected to the training during morning hours for alternative three days for six weeks and group II acted as control. The jump rope training was selected as independent variable and the criterion variables speed and explosive power were selected as dependent variables and the selected dependent variables were assessed by the standardized test items. Speed was assessed by 50m run test and the unit of measurement in seconds and the explosive power was assessed by vertical jump test and the unit of measurement in centimeters. The experimental design selected for this study was pre and post test randomized design. The data were collected from each subject before and after the training period and statistically analyzed by using dependent 't' test and analysis of covariance (ANCOVA).

RESULTS AND DISCUSSIONS

The data pertaining to the variables in this study were examined by using dependent 't' test to find out the significant improvement and analysis of covariance (ANCOVA) for each variables separately in order to determine the difference and tested at .05 level of significance. The analysis of dependent 't' test on data obtained for speed and explosive power of the pre test and post test means of experimental and control group have been analyzed and presented in Table I.

TABLE- I

MEAN AND DEPENDENT 't' TEST OF EXPERIMENTAL AND CONTROL GROUPS ON SELECTED VARIABLES

Variables	Mean	Jump Rope Training Group	Control Group
Speed	Pre test Mean	7.40	7.39
	Post test Mean	7.27	7.40
	't' test	**7.40***	**1.00**
Explosive power	Pre test Mean	170	171
	Post test Mean	172	171
	't' test	**16.32***	**1.48**

*Significant at 0.05 level of confidence (11) = 2.201

The obtained 't' ratio value of experimental group is higher than the table value, it is understood that Jump rope training had significantly improved the performance of speed and explosive power. However, the control group has no significant improvement as the obtained 't' value is less than the table value; because it was not subjected to any specific training. The analysis of covariance on the data obtained on speed and explosive power due to the effect of jump rope training and control groups have been analysed and presented in Table II.

TABLE- II

ANALYSIS OF COVARIANCE OF EXPERIMENTAL AND CONTROL GROUPS ON SELECTED VARIABLES

Variables	Adjusted Post Test Means		Source of Variance	SS	df	Mean Squares	'F'- Ratio
	Jump Rope Training Group	Control Group					
Speed	7.27	7.40	Between	0.106	1	0.106	75.23*
			Within	0.030	21	0.001	
Explosive power	172	170	Between	23.184	1	23.184	215.89*
			Within	2.26	21	0.107	

*Significant at .05 level of confidence, df (1, 21) = 4.32

Table II shows that the obtained 'F' ratio value are 75.23 and 215.89 which are higher than the table value 4.32 with df 1 and 21 required to be significant at 0.05 level. Since the obtained value of 'F' ratio is higher than the table value, it indicates that there is significant difference among the adjusted post- test means of jump rope training and control group on Speed and explosive power.

To the most sports people, jump rope training offered a better method of developing speed and exlosive power. The present study also produced the same result.

CONCLUSIONS

1. The Jump rope training had significantly improved the speed and explosive power.

2. There was significant difference among the adjusted post – test means of jump rope training and control group on speed and explosive power.

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