

MAGNIFICENT PROMOTION OF MUSCULAR STRENGTH AND EXPLOSIVE POWER AMONG COLLEGE FEMALE VOLLEYBALL PLAYERS DUE TO THE SELECTED JUMP ROPE TRAINING

Dr. A. Praveen^A, Assistant professor, Pondicherry University,
Department of Physical Education and Sports,
Dr. Sowmya Joseph^A, Physical Education Instructor,
Christ (Deemed to be University) Bangalore,
Dr. T. Arun Prasanna^{A1}, Post Doctoral Fellow,
Alagappa University College of Physical Education,
R.Manoranjith^{A2}, Ph.D Research Scholar,
Alagappa University College of Physical Education

Abstract

The intention of the study was to investigate the magnificent promotion of muscular strength and explosive power among college female volleyball players due to the selected jump rope training. To achieve the study 30 female volleyball players were selected as subject in Christ university, Bangalore, Karnataka at random and their ages ranged from 17 to 22 years. The subject was divided into two equal groups each of 15 subjects. The study was formulated as a true random group design, consisting of a pre-test and post-test. The groups were assigned as jump rope training and control group in an equivalent manner. The two groups were participated the training for a period of eight weeks to find the outcome of the training packages. The two groups were statistically analyzed by using analysis of variance (ANOVA). The level of confidence was fixed 0.05 level. Result of the study experimental group had significant improvement on muscular strength and explosive power when compare to control group.

Keywords: Jump Rope Training, Muscular Strength, Explosive Power, Female Volleyball Players.

Introduction

Sport is all forms of physical activity which, through casual or organized participation, aim to use, maintain or improve physical fitness and provide entertainment to participants. Performance in sports and games depends on both physical and mental abilities. Body and mind have an equal contribution in human success. Sport may be competitive, where a winner or winners can be identified by objective means, and may require a degree of skill, especially at higher levels.

Volleyball is an exhilarating and exigent sport that has developed into a premier interscholastic and professional spectator event. Jumping is a basic activity that needed to successful performance in volleyball. Because specific technical tactical elements such as spiking, blocking and jump serving are performed while jumping. Serving, passing and placing the ball are accompanied by spiking or attacking actions. Training function of the lower extremities is the main function of all regimens doing the jumping or hopping is the key to success of the player. Jump rope training requires the co-ordination of several muscle group to sustain the precisely timed and rhythmic movements that are integral to the exercise (Ozer,D 2010).

Jump rope exercises represent an alternative form of exercise that involves upper and lower body movements. Doing of the jump rope training arms rotate the rope while legs perform repeated bounces with the aim to maintain constant vertical takeoff and landing phases until the end of the exercise. During successive jumps the body needs to reestablish balance and propulsion force through a coordinated action of upper and lower body region muscles. Jump Rope is cheap portable and can burn more calories. Jumping with a rope can help to prevent knee damage which can happen during the rush as help to strengthen upper and lower limbs. (Trecroci 2015).

Jump rope recital depends habitually on the gross motor coordination that is the ability to coordinate arms legs and torso movements when the whole body is in motion. Jump rope training program is a good conditioning method for overhead athletes because of its potential benefits to shoulder strength. Players' strength determined with an isokinetic dynamometer at 180 and 60°/s on external and internal rotators supraspinatus peak torque and total work of the dominant shoulder (Duzgun 2010).

Jump rope is usually maintained for extended periods of time, it helps in developing the cardiovascular system. Oxygen consuming activity can get "burning rate" of more than 700 to 1200 calories for every hour for lively movement, mainly due to the speed and intensity of the jump and foot, the consumption of about 0.1 to 1.1 calories per jump. The better footwork balance and coordination, it enables us to move better in order to improve the efficiency. Jumping on the feet balls requires adjusting the nervous muscle for the imbalance caused by the continuous jumping of the body and the brain. Jumping can improve and increase muscular endurance increased awareness achieves dynamic balance and harmonization.

Statement of the Problem

The purpose of the investigate was magnificent promotion of muscular strength and explosive power among college female volleyball players due to the selected jump rope training.

Methodology

To achieve the purpose of present study 30 female volleyball players from Christ university Bangalore, Karnataka at the age of 17 to 22 years. The subject was dividing into two equal groups. The investigator selected the following variables for the present investigation.

Table I

s.no	Variables	Test items	units
1.	Muscular strength	Sit ups	counts
2.	Explosive power	Standing broad jumps	meters

True randomized experimental group design has been employed with two groups, namely jump rope training group and control group with 15 subjects each. Group I participated their respective treatments for a period of eight weeks and no training were given to the control group. The training should be given at morning time with proper warming up exercises for 3 times a week (Monday, Wednesday and Friday) of eight weeks. The jump rope training exercises are High Knees, Forward Jump, Alternate Step, Twister, One Leg Jump, Side to Side Forward Jump, Scissor Legs, Heel Taps, Running with rope all the exercise will be using of jump rope. The data should be collected before and after the training protocol. The two groups were statistically analyzed by using analysis of variance (ANOVA).

Result finding

Table- II
Analysis of variance of muscular strength and explosive power of jump rope training and control group of college female volleyball players

Muscular Strength						
Tests	Jump Rope Training	Control Group	Sum of Square	Df	Mean Square	F- Ratio
Pre test	27.46	26.86	2.70	1	2.70	0.79
			95.46	28	3.40	
Post test	29.73	27.26	45.63	1	45.63	13.34*
			99.86	28	3.42	
Explosive power						
Tests	Jump Rope Training	Control Group	Sum of Square	Df	Mean Square	F- Ratio
Pre test	1.57	1.56	.001	1	.001	1.01
			.033	28	.011	
Post test	1.60	1.56	.014	1	.014	10.94*
			.035	28	.001	

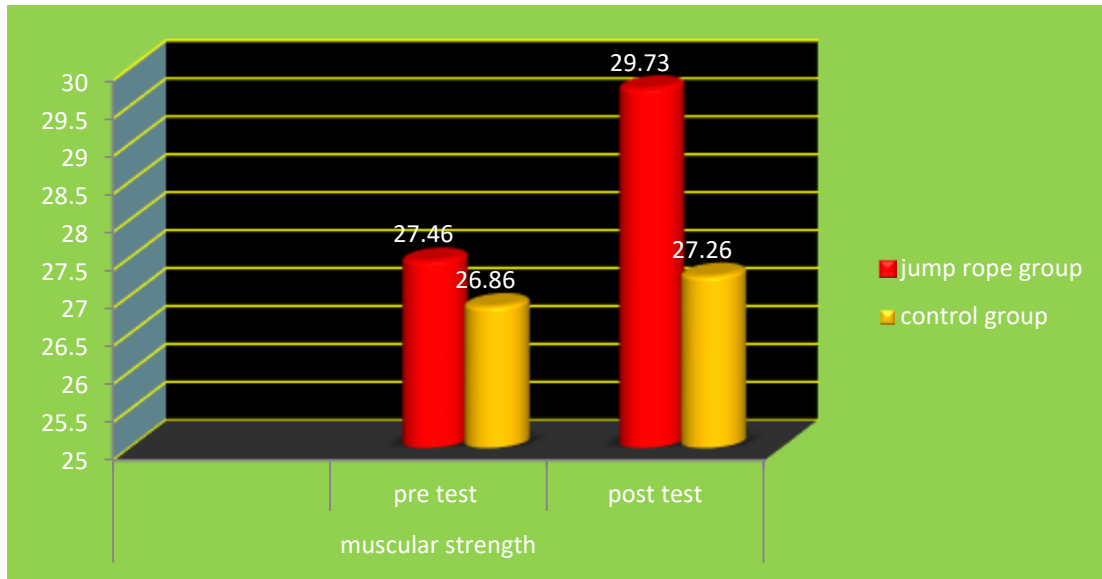
***Significant 0.05 table f=3.32, df(1.28)**

The value of muscular strength pre-test for jump rope and control group F ratio value 0.79 was found to be lower than the requisite value 3.32 was significantly lesser than the table value 3.32 df 1 and 28 significance at the level of confidence 0.05. The obtained explosive power post-test for jump rope training and control group F ratio value 13.34* was found to be higher than the requisite value 3.32 was significantly greater than the table value 3.32 df 1 and 28 significance at the level of confidence 0.05.

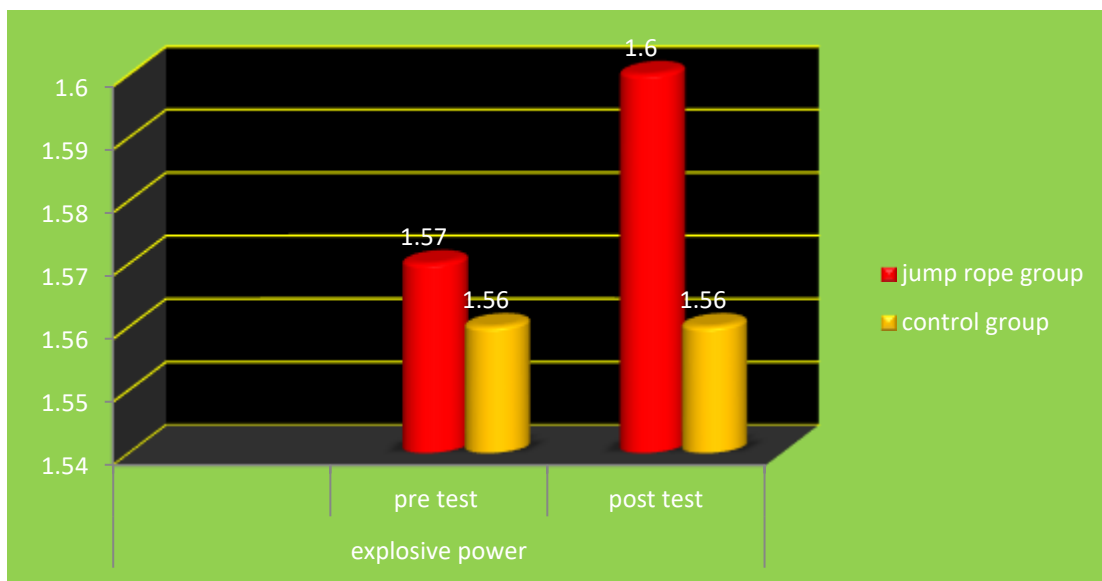
The value of explosive power pre-test for jump rope and control group F ratio value 1.01 was found to be lower than the requisite value 3.32 was significantly lesser than the table value 3.32 df 1 and 28 significance at the level of confidence 0.05. The obtained explosive power post-

test for jump rope training and control group F ratio value 10.94* was found to be higher than the requisite value 3.32 was significantly greater than the table value 3.32 df 1 and 28 significance at the level of confidence 0.05.

Bar diagram of muscular strength of jump rope training and control group of college female volleyball players



Bar diagram of explosive power of jump rope training and control group of college female volleyball players



Conclusion

Jump ropes are often used as part of popular exercise programs directed to cardiovascular and respiratory conditioning (Strachan 1998). Athletes, such as boxers and basketball players, engaging in exercise programs including jump ropes develop better balance, foot quickness, and cardiovascular conditioning. Strength conditioning provided by exercising with jump ropes is limited almost entirely to the legs. The result of the study reveals that there was a significant improvement in the experimental group on muscular strength and explosive power when compare to the control group after the eight weeks of jump rope training.

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