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RESEARCH ARTICLE

EFFECT OF ROPE SKIPPING TRAINING PROGRAMME ON LEG STRENGTH AND AGILITY ON UNIVERSITYS GIRLS

Dharmendra Singh[1], Rajedra Kumar Rajan[2]

1. Assistant Professor (GF), Department of Physical Education university of Allahabad (U.P.).
2. Assistant Professor (GF), Department of Physical Education University of Allahabad(U.P.).

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Corresponding Author

Dharmendra Singh

Abstract

The main purpose and objective of the present study was to find out the effect of rope skipping on Leg strength and agility on University girls. For the purpose of this study Twenty (20) under graduate girls of Allahabad University was selected as subjects. These girls age ranged from 18 to 22 years. The age of the above selected girls was verified from their respective age records in the University. All the subjects were further classified randomly assigned into two equal group one is experimental group and the other is Control Group each consisting of Ten subjects Leg strength and agility were assessed at the beginning and after the experimental period of eight weeks in terms of per-test and post – test scores on the criterion measures. Leg strength was measured by using dynamometer and agility was measured by administering the (4X10Mts) shuttle run test. The collected data were an analysis by using analysis of co-variance was used as the statistical treatment with the level of confidence at 0.05.From the result it is found that there was a significant improvement on leg strength and agility for rope skipping group when compared with control group. .

INTRODUCTION

In sports the word "Training" is generally understood to be a synonym of doing physical exercises. In a narrow sense, training is doing physical exercises for the improvement of performance. Sorts training is a scientifically based and pedagogically organized process which through planned and systematic effect on performance ability and performance readiness aims at sports perfection and performance improvement as well as at the contest in sports competition.

Step aerobics is distinguished from other forms of aerobic exercise by its use of an elevated platform (the step). The height can be tailored to individual needs by inserting risers under the step. Rope skipping classes are offered at many gyms and fitness centers which have an exercise program.

Strength is a vital factor on which the sports performance depends. Depending upon the magnitude and type of resistance to be tackled in various sports, the sportsman of different level and type of strength to achieve good performance. Agility is generally defined as the ability to change the direction quickly and effectively while moving as nearly as possible at full speed. It is depended primarily on strength, reaction time, speed of movement and specific muscle co-ordination. The athlete are being trained on scientific guidelines with highly sophisticated means for better achievement in their concerned sport to enable the coaches to get optimum performance with minimum expenditure of energy and time. They are being exposed to the exercise and training methods, which have got beneficial effect for achieving higher standard. The main aspect to be emphasized in order to achieve high level of performance is the efficient function of the body. They must function well enough to support the particular activity

that the individual is performing since different activities make different demands upon the organism with respect to blood circulation, respiration, metabolic neurological and temperature regulating functions, Physiological fitness is specific to activity. Human body is highly adaptable to exercise. The response of each system is discrete, hard work in the heat is necessary to improve the fitness of the temperature regulatory mechanism. Each task has its major physiological components and fitness for the task required are effective functioning of the appropriate system. In competitive sports, for the selection of particular sports, one has to consider measures of human body and the physical fitness which play a dominant role at higher level of sports competitions. Scientists and physiologists have been of the view that anthropometry and physical components of an athlete have a lot to do with the performance, more than the techniques and tactics of a player of a team. The research findings show that a high level of technical perfection alone has nothing to do with the success in competitive sports. Most of the game demands a greater amount of speed, strength, endurance, flexibility, co-ordination and maximum fitness of the Organism. Modern scientific methods of training players or team place greater responsibility on the coaches and physical educators. They are also responsible for the selection of team taking into consideration the physical and physiological qualities essential for the game.

Methodology:

Twenty (20) under graduate girls of Allahabad University was selected as subjects. These girls age ranged from 18 to 22 years. The age of the above selected girls was verified from their respective age records in the University. The selected subjects were divided into two groups of ten subjects each. Group I considered as experimental group who underwent rope skipping training and Group II considered as control that did not undergo any special training programme. The experimental group underwent rope skipping programme for 3 days per weeks. The control group did not participate in any special training programme on strenuous physical activities apart from their day to day activities. The experimental group underwent their rope skipping under the instruction and supervision of the investigators. The data were collected on selected criterion variables such as leg strength and agility were measured by using leg lift with the dynamometer and shuttle run at before and after the eight weeks of rope skipping as pre and post test. A pilot study was conducted in order to select appropriate intensity of loads to undertake Rope Skipping of three repetitions each. A group of ten girls were selected and asked to perform the Rope Skipping with maximum intensity and numbers of Skipping per minute were recorded with heart rates. This was done to guide their maximum working capacity. The number of Skipping per minute, which was 55 with the heart rates 180 beat/min made them to undergo Rope Skipping with 60 % intensity of their best for first two weeks (180 beat/min was the max heart rates and 108 beat/min was the heart rates with 60% intensity). For maintaining the rhythm in their skipping, a metronome was used. A break of 30 seconds was given between each repetition so that the pulse rate comes down to approximately in between 80 to 90 per minute. The intensity was increased 7% -8% every fort night up to 90 percent in the last two weeks. The frequency of exercise schedules was thrice a week. Analysis of covariance (ANACOVA) was applied to find out significant difference if any between the experimental and control group.

RESULTS & DISCUSSION:

TABLE-1

ANALYSIS OF COVARIANCE FOR LEG STRENGTH AND AGILITY FOR ROPE SKIPPING AND COTROL GROUP

Variable	Group Name	Rope skipping Group	Control Group	F-ratio
Leg Strength (in kg.)	Pre-test Mean ± S.D	55.67 ± 1.35	55.93 ± 1.45	0.265
	Post-test Mean ± S.D	58.13 ± 1.45	55.87 ± 1.51	18.14*
	Adj.Post-test Mean ± S.D	58.23	55.77	38.12*

Agility (in second)	**Pre-test Mean ± S.D**	11.67 ± 0.035	11.90 ± 0.013	0.54
	Post-test Mean ± S.D	11.07 ± 0.022	11.93 ± 0.091	4.66*
	Adj .Post-test Mean ± S.D	11.01	11.901	5.01*

Table-I showed that the results of the study there was a significant difference between experimental and control group on leg strength and agility. Further the results of the study showed that there was a significant improvement in the performances of leg strength and agility due to eight weeks of rope skipping programme. However the improvement was in favor of experimental group.

DISCUSSION:

The analysis of data using analysis of covariance revealed that two experimental groups trained by Rope skipping exercise, showed significant changes in the leg strength and agility.. The better performance of experimental group as compared to the control group may be due to the fact that the experimental groups have undergone a systematic and progressive training programme (thrice a week) for duration of eight weeks whereas control groups did not participated in any kind of formal training. It is an established fact that regular training/conditioning of optimum intensity brings some specific physiological adaptive changes in various parameters namely, cardiovascular system, muscular system and body composition. The effect of Rope skipping inducted higher physiological changes probably its movement was more recreational and may be due to fact that Skipping obviously involve almost the entire parts of body. The Rope Skipping group also achieved better development because Rope Skipping types of exercise were motivating to the subjects and they were very familiar with this type of activity also.

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