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Efficacy of step aerobics training programme on leg strength and agility

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Abstract

The purpose of the study was to find out the effect of step aerobic programme on leg strength and agility among women students. To achieve this purpose, 20 women students were randomly selected as subjects from the Department of Physical Education and Sports Sciences, Annamalai University studying in various classes. The age of the subjects were ranged from 18 to 23 years. The subjects were further classified at random into two equal groups of 10 subjects each in which group - I underwent step aerobic programme for three days per week for eight weeks and group - II acted as control who were not undergo any special training programme. The selected criterion variables such as leg strength and agility were assessed before and after the training period. The collected data were statistically analysed by using Analysis of Covariance (ANCOVA). From the results of the study it was found that there was a significant improvement on leg strength and agility for step aerobic group when compared with the control group.

Keywords: Step Aerobics, Leg Strength and Agility

1. 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.

Sports 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. Step aerobics classes are offered at many gyms and fitness centers which have a group 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 sports and 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.

2. Methodology

The purpose of this study was to find out the effect of step aerobics on leg strength and agility. To achieve the purpose of this study 20 college women students who were studying in the Department of Physical Education and Sports Sciences, Annamalai University during the academic year 2009-2010 were randomly selected as subjects. The age of the subjects were ranged from 18 to 23 years. The selected subjects were divided into two groups of ten subjects each. Group I considered as experimental group who underwent step aerobics training and Group II considered as control that did not undergo any special training programme.

The experimental group underwent step aerobics programme for 3 days per week for 8 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 step aerobics under the instruction and supervision of the investigators.

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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 step aerobics as pre and posttest. Analysis of covariance (ANACOVA) was applied to find out significant difference if any between the experimental and control group.

Table 1: Analysis of covariance for leg strength and agility for step aerobics group and control group

Variable Name	Group Name	Step Aerobics Group	Control Group	'F' Ratio
Leg Strength (in Kilograms)	Pre-test Mean \pm S.D	55.67 \pm 1.35	55.93 \pm 1.45	0.265
	Post-test Mean \pm S.D.	58.13 \pm 1.41	55.87 \pm 1.51	18.14*
	Adj. Post-test Mean \pm S.D.	58.23	55.77	38.12*
Agility (in Seconds)	Pre-test Mean \pm S.D	11.67 \pm 0.035	11.90 \pm 0.013	0.54
	Post-test Mean \pm S.D.	11.07 \pm 0.022	11.93 \pm 0.091	4.66*
	Adj. Post-test Mean \pm S.D.	11.01	11.901	5.01*

* Significant at 0.05 level of confidence.

(The table values required for significance at 0.05 level of confidence for 1 and 18 & 1 and 17 are 4.41 and 4.45 respectively).

3. Results

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 step aerobics programme. However the improvement was in favour of experimental group.

4. Conclusions

1. There was a significant difference between experimental and control groups on leg strength and agility.
2. There was a significant improvement in the performances of leg strength and agility. However this improvement was in favour of experimental group due to eight weeks of step aerobics programme.

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