



## Effect of Parcourse Training Programme on Leg Strength and Agility

**Dr. R. Venkatachalapathy**

Assistant Professor, Department of Physical Education and Sports Sciences, Annamalai University, Chidambaram, Tamilnadu, India.

Received 30th June 2014, Accepted 30th July 2014

### Abstract

*The purpose of the study was to find out the effect of parcourse training 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 parcourse training 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). The leg strength was assessed by using dynamometer and agility was assessed by administering the shuttle run test. From the results of the study, it was found that there was a significant improvement on leg strength and agility for parcourse training group when compared with the control group.*

**Keywords:** Parcourse Training Programme, Leg Strength, Agility, ANCOVA.

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### 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. A new concept of circuit training developed in Europe has been adopted recently in the United States and Canada called 'parcourse'. It consists of a series of stations set up over a one to two and a half mile path, to provide a recreational exercise circuit for individuals of all ages and abilities. 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.

### Methodology

The purpose of this study was to find out the effect of parcourse training 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 2013-2014 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 parcourse training and Group II considered as control that did not undergo any special training programme. The experimental group underwent parcourse training 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 parcourse training 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 parcourse training as pre and post test. Analysis of covariance (ANCOVA) was applied to find out significant difference if any between the experimental and control group.

### Parcourse Training

A series of seven exercise stations was framed

### Correspondence

Dr.R.Venkatachalapathy

E-mail: r.vinkitan@gmail.com, Ph. +919750311051

in a standard 400 meters track. A subject should move from one station to another by jogging within a distance of 150 meters. In between sets the subjects continue

their exercise without any rest period. In parcourse training, the exercise stations were same as in circuit training.

## Results

**Table I.** Training Intensity for Parcourse Training

Week	Duration of Exercise in a Station (in seconds)	Number of Sets
<b>I - II</b>	45	2
<b>III - IV</b>	45	3
<b>V - VI</b>	50	2
<b>VII - VIII</b>	50	3
<b>IX - X</b>	55	2
<b>XI - XII</b>	55	3

The subjects underwent the training programme alternatively for three days in a week, excluding

Saturdays and Sundays for twelve weeks between 5.00 and 6.00 p.m.

**Table I.** Analysis of covariance for leg strength and agility for parcourse training group and control group

Variable Name	Group Name	Parcourse Training Group	Control Group	'F' Ratio
<b>Leg Strength (in Kilograms)</b>	<b>Pre-test Mean <math>\pm</math> S.D</b>	55.67 $\pm$ 1.35	55.93 $\pm$ 1.45	0.265
	<b>Post-test Mean <math>\pm</math> S.D.</b>	58.13 $\pm$ 1.41	55.87 $\pm$ 1.51	18.14*
	<b>Adj. Post-test Mean <math>\pm</math> S.D.</b>	58.23	55.77	38.12*
<b>Agility (in Seconds)</b>	<b>Pre-test Mean <math>\pm</math> S.D</b>	14.67 $\pm$ 0.035	14.90 $\pm$ 0.013	0.54
	<b>Post-test Mean <math>\pm</math> S.D.</b>	13.07 $\pm$ 0.022	14.93 $\pm$ 0.091	4.66*
	<b>Adj. Post-test Mean <math>\pm</math> S.D.</b>	13.01	14.901	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).

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 parcourse training programme. However the improvement was in favour of experimental group.

## Conclusions

1. There was a significant improvement in leg strength and agility after the parcourse training programme. However this improvement was in favour of experimental group due to eight weeks of parcourse training.

2. There was a significant difference between experimental and control groups on leg strength and agility.

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