

Effects of Ladder Training on Selected Motor Fitness Variables Among Handball Players



Physical Education

KEYWORDS : Agility ladder training, Speed, Agility, 50 yards dash and Shuttle run.

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ABSTRACT

The purpose of the study was to find out the effects of ladder training on selected motor fitness variables among twenty women handball players from Alagappa University College of Physical Education, karaikudi were selected randomly as subjects. The age of the students ranged from 18 to 23 years. The selected subjects were divided into two groups. Group A underwent ladder training, Group B acted as control group. The experimental group was subjected to the training for three days in a week for the period of 8 weeks. The motor fitness variables namely speed and agility were measured by 50 yards dash and shuttle run. 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 in ladder training group on motor fitness variables namely speed and agility among women handball players.

INTRODUCTION

The ladder is a time-tested and proven effective tool for improving our foot work. The training effect is similar to jump rope, but with several advantages. First, agility ladder training is a multi-directional. In sports, we are not staying in one spot. We are moving forward, sideward and sometimes backwards. Second, our feet are also allowed to move independently in more complex patterns than a jump rope allows. And third, the cycle time can be increased greatly, because we are not limited by the speed of the rope turn. The end result is that we can train our feet to move quickly through complex footwork patterns. The benefits to any ground-based sport are huge.

Training on a ladder is simple. We run through the ladder in a specified pattern as fast as possible. If we step on a rung or fall out of the pattern, we have to start over. It sounds easy but it's not! The simplest pattern is one foot in each rung. More complex patterns involved moving our feet inside and outside of the rungs. Our feet will move faster than a chef's knife chopping carrots. And don't worry, the included training guide will teach us all the patterns we need to know.

Ladder training will improve our speed, coordination, timing and balance and also it will set our calves on fire. We are not a muscle isolationist, but it is seriously effective calf training because this engages the fast twitch muscles. Olympic lifts, sprinting and other power training will help our move large distances quickly and that is a very important component of sports movement. Agility ladder training will add precision to those last few steps that get our body into perfect position. The importance of quick adjustment steps cannot be understated. They are like putting in golf.

Adding it to our workout program is simple. We can throw it in as a warm-up. It elevates our heart rate and awakens our CNS. We can add it into any workout where we might normally put jump roping. Or we can place the ladder training at the end for a nice finisher. We only need 3-5 minutes a couple times a week to improve. After only a few weeks of training, we will notice significant improvements in our movement quality.

PURPOSE OF THE STUDY

The purpose of the study was to find out the effects of ladder training on selected motor fitness variables among college women handball players.

HYPOTHESIS

1. There would be a significant improvement on speed and agility due to ladder training programme among college women handball players.
2. There would be a significance difference between ladder training group and control group on speed and agility among college women handball players.

METHODOLOGY

The purpose of the study was to find out the effects of ladder

training on selected motor fitness variables among twenty women handball players from Alagappa University College of Physical Education, karaikudi were selected randomly as subjects. The age of the students ranged from 18 to 23 years. The selected subjects were divided into two groups. Group A underwent ladder training, Group B acted as control group. The experimental group was subjected to the training for three days in a week for a period of 8 weeks. The motor fitness variables namely speed and agility were measured by 50 yards dash and shuttle run. The data were collected from each subject before and after the training period and statistically analyzed by dependent 't' test which is used to find out the significant improvement on selected criterion variables and Analysis of Covariance (ANCOVA) was used to find out the significant difference between the experimental and control groups on each variables separately. All the cases 0.05 level of confidence was fixed as a level of confidence to test the hypotheses.

ANALYSIS OF THE DATA

The effects of independent variables on selected speed and agility were determined through the collected data by using appropriate statistical techniques and the results are presented below. The analysis of dependent 't' test on the data obtained for speed and agility of the pre-test and post-test means of ladder training and control groups have been analysed and presented in table I.

TABLE -I THE SUMMARY OF MEAN AND DEPENDENT 't' TEST FOR THE PRE AND POST TESTS ON SPEED AND AGILITY OF LADDER TRAINING AND CONTROL GROUPS

Variables	Name of the test	Ladder training group	Control group
Speed	Pre test mean	8.54	8.52
	Post test mean	7.60	8.51
	't' test	7.12*	0.62
Agility	Pre test mean	12.42	12.47
	Post test mean	11.53	12.44
	't' test	9.24*	0.22

* Significant at 0.05 level.

(The table value required for .05 level of significance with df 9 is 2.15).

The Table I show that the pre-test mean value of motor fitness variables namely speed and agility in ladder training group and control group are 8.54 & 8.52 and 12.42 & 12.47 respectively and the post test means are 7.60 & 8.51 and 11.53 & 12.44 respectively. The obtained dependent t-ratio values between the pre and post test means of speed and agility in ladder training group are 7.12 and 9.24. The obtained dependent t-ratio values between the pre and post test means of speed and agility in control group are 0.62 and 0.22 respectively. The table value required for significant difference with df 9 at 0.05 level is 2.15. Since, the obtained 't' ratio value of experimental group is

greater than the table value, it is understood that ladder training group had significantly improved the speed and agility. However, the control group has not improved significantly because the obtained 't' value is less than the table value, as they were not subjected to any specific training.

The analysis of covariance on speed and agility of ladder training and control groups have been analysed and presented in Table II

TABLE - II ANALYSIS OF COVARIANCE ON SPEED AND AGILITY OF LADDER TRAINING AND CONTROL GROUPS

Variables	Adjusted post test means		Source of variance	Sum of squares	Df	Mean squares	Obtained 'F' Ratio
	Ladder training group	Control group					
Speed	7.62	8.53	Between	9.015	1	9.015	15.28*
			Within	0.035	17	0.59	
Agility	11.56	12.46	Between	16.20	1	16.20	25.08*
			Within	0.038	17	0.646	

***Significant at .05 level of confidence**

(The table values required for significance at .05 level of confidence with df 1 and 17 is 4.21)

The table II shows that the adjusted post test means of speed and agility of ladder training and control groups are 7.62 & 8.53 and 11.56 & 12.46 respectively. The obtained 'F' ratio value of speed and agility are 15.28 and 25.08 which are higher than the table value of 4.21 with df 1 and 17 required for significance at 0.05 level. Since the value of F- ratio is higher than the table value, it indicates that there is significant difference among the adjusted post test means of ladder training and control groups on selected variables namely speed and agility.

The results of the study showed that there was a significance difference between the adjusted post test mean of agility ladder training group and control group on speed and agility among women handball players.

CONCLUSION

1. There was a significant improvement on speed and agility due to the effects of the ladder training among college women hand ball players.
2. There was a significance difference between ladder training group and control group on speed and agility among college women handball player.
3. Finally it was concluded that ladder training group is better than control group. Hence I recommended that physical education experts and coaches should give due to the importance of ladder training which helps the athlete to do better performance in sports events.

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