EFFECT OF LADDER TRAINING ON SPEED, AGILITY AND QUICKNESS AMONG BADMINTON PLAYERS

M.Prabhakar*, G. Sokkanathan**

**Director of Physical Education, Madurai Kamaraj University College, Sattur*

***Director of Physical Education, Saraswathi Narayanan College, Madurai*

ABSTRACT

The purpose of the study was to find out the effects of ladder training on speed, agility and quickness among badminton players. Thirty men badminton players from Royal Badminton Academy, Sattur were selected randomly as subjects. The age of the students ranged from 8 to 12 years. The selected subjects were divided into two groups namely ladder training group and control group, Group A underwent ladder training for eight weeks of two days per weeks. Group B acted as control group, who were not engaged in any special activities other than their daily routine. The Selected as criterion variable namely speed, agility and quickness were measured by 50 yards dash, shuttle run and Nelson Hand Speed of Movement Test. 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. There was a significant improvement on speed, agility and quickness due to the effects of the ladder training among badminton players.

Key words: *Ladder training on speed, agility and quickness among badminton players*

INTRODUCATION

Ladder drills are an excellent way to improve foot speed, agility, coordination and overall quickness. They are an integral part of many SAQ programs and compliment many different sports and events, (Ladder drills are, 2016).

Ladder drills could be very effective to work as a warm up for true speed training. The repetitive action of loading and unloading the legs can be a great warm up for the muscles, tendon elasticity, and also the cardio component of sprinting. However technique is very important, and focus has to be paid to speed above all else. Most people tend to go too slowly while also trying to make it too fancy. Speed ladder to produce speed benefits, the individual doing it has to be moving at maximum possible speed, hitting the floor with maximum force, and at an angle that produces the best horizontal force as possible. If you hit the ground with a vertical force, you get a vertical force back.

Ladder drills would work well as a warm up for the same reasons as for speed, but in terms of developing higher levels of agility, it may not be as beneficial. It could be incorporated more in lower threshold workouts to involve some change of direction with low loads, much like when doing dead lifts or Olympic lifts with less than maximal weight to work on technique and stay sharp. ladder drills involve a rapid change of direction force from one position to the next, the direction of application is more vertical in nature compared to horizontal, and the extension out from under the centre of mass is usually pretty small compared to more conventional agility training.

Ladder drills are more repetitive in nature in a set pattern and don't involve reaction time. One way to work on reaction time with ladders is have blind signals to produce a change in the pattern. For instance, have the person go forward in the ladder and when you clap, they have to turn and sprint back the way they came or sprint forward. Another way is to have them go through a pattern then yell out either left or right and they have to process the direction and make an action.

Ladder is a great tool when used appropriately, but much like a screw driver isn't a hammer, it doesn't help to build top end speed, agility or quickness compared to conventional training, and relying on it could potentially make athletes slower. It's very beneficial for conditioning, rehabbing lower body injuries, and as a warm up for higher level demands, but on its' own it's not going to help build a better athlete, (Ladder drills could, 2016).

The purpose of the study was to find out the effects of ladder training on speed, agility and quickness among badminton players. It was hypothesized that **t**here would be a significant improvement on speed, agility and quickness due to ladder training programme among badminton players. It was hypothesized that **t**here would be a significance difference between ladder training group and control group on speed, agility and quickness among badminton players

METHODOLOGY

Subjects and Variables

Thirty men badminton players from Royal Badminton Academy, Sattur were selected randomly as subjects. The age of the students ranged from 8 to 12 years. The selected subjects were divided into two groups namely ladder training group and control group, Group A underwent ladder training for eight weeks of two days per weeks. Group B acted as control group, who were not engaged in any special activities other than their daily routine. The Selected as criterion variable namely speed, agility and quickness were measured by 50 yards dash, shuttle run and Nelson Hand Speed of Movement Test.

Training Programme

Following ladder training exercise were given during training period as One-Ins, Two-Ins, Side Shuffle, One Leg Hops – Forward, One Leg Hops Backward, One Foot Every Other Square Forward, One Foot Every Other Square – Backward, In and Out – Forward, In and Out – Backward, Ali Shuffle, Ali Crossover, W Weave, Two Feet Every Other Square – Forward, Two Feet Every Other Square – Backward, 2 In 2 out (Forward-Backward) Right and Left, 2 In 2 out Side (Right Side) Backward, 2 In 2 out Side (Left Side) Backward, 2 In 2 out Side (Right Side) Forward, 2 In 2 out Side (Left Side) Forward, 90 Degree Side Turns – Forward, 90 Degree Side Turns – Backward, 180 Degree Turns - Turning Forward and 180 Degree Turns - Turning Backward.

Statistical Procedure

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 analysis of dependent‘t’ test on the data obtained for speed, agility and quickness 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, Agility and Quickness Of Ladder Training and Control Groups

S.N	Variable	Test	Ladder Training group	Control group
1.	Speed	Pre test mean	9.27	8.755
		Post test mean	8.53	8.756
		‘t’ test	**4.42***	0.12
2	Agility	Pre test mean	11.67	11.79
		Post test mean	11.49	11.78
		‘t’ test	**6.52***	1.71
3	Quickness	Pre test mean	0.19	0.19
		Post test mean	0.16	0.191
		‘t’ test	**6.48***	0.58

** The table value required for .05 level of significance with df 14 is 2.145.*

Table I show that the pre-test mean value of speed, agility and quickness in ladder training group and control group are 9.27 & 8.755; 11.67 & 11.79 and 0.19 & 0.19 respectively and the post test means are 8.53 & 8.756; 11.49 & 11.78 and 0.16 & 0.191 respectively. The obtained dependent t-ratio values between the pre and post test means of speed, agility and quickness in ladder training group are 4.42, 6.52 and 6.48. The obtained dependent t-ratio values between the pre and post test means of speed and agility in control group are 0.12, 1.71 and 0.58 respectively. The table value required for significant difference with df 14 at 0.05 level is 2.145. 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, agility and quickness of ladder training and control groups have been analysed and presented in table II.

Table-II: Analysis of Covariance of Ladder Training and Control Groups on Speed, Agility and Quickness

S.No	Variable	Adjusted post test mean		Source	SS	df	MS	F
		LTC	CON					
1.	Speed	8.32	8.96	SSB	2.59	1	2.59	12.85*
				SSW	5.45	27	0.2	
2.	Agility	11.55	11.72	SSB	0.2	1	0.2	35.12*
				SSW	0.15	27	0.01	
3.	Quickness	0.155	0.192	SSB	0.01	1	0.01	50.62*
				SSW	0.01	27	0.00037	

**Significant at .05 level of confidence, (The table values required for significance at .05 level of confidence with df 1 and 27 is 4.21)*

Table II shows that the adjusted post test means of speed, agility and quickness of ladder training and control groups are 8.32 & 8.96; 11.55 & 11.72 and 0.155 & 0.192 respectively. The obtained 'F' ratio value of speed, agility and quickness are 12.85, 35.12 and 50.62 which are higher than the table value of 4.21 with df 1 and 27 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 speed, agility and quickness. The results of the study showed that there was a significance difference between the adjusted post test mean of ladder training group and control group on speed, agility and quickness among badminton players.

DISCUSSION ON FINDINGS

The results of the study indicates that the experimental group namely ladder training group had significantly improved the selected dependent variables namely speed, agility, quickness when compared to the control group. It is also found that the improvement caused by ladder training when compared to the control group.

Srinivasan M and Sathishkumar (2016) find out the effect of ladder training on selected physical fitness variables on school volleyball players. Fifteen school volleyball players were randomly, physical fitness variables namely, agility and explosive power were selected as dependent variable. The training period was for six weeks, three days a week two sessions each day. It is concluded that there is a significant improvement due to ladder training on agility, explosive power School volleyball players.

Graydon L. Gains (2010) examined the effect of ladder drill weight training and iron yoga on agility, speed, flexibility and vital capacity among college badminton players. Forty male players and they were randomly divided into four groups; each group consists of ten subjects. It was concluded that the ladder drill, weight training and iron yoga had significantly improved the agility, speed and flexibility and vital capacity among college badminton players.

It is inferred from the above literatures and from the results of the present study that systematically designed ladder training develops the performance standard, as the selected dependent variables are very important qualities for better performance in almost all sports and games. Hence it is concluded from the results of the study that systematically and scientifically designed ladder training may be given in the training programmes of all the disciplines in order to achieve maximum performance. From the result of the present investigation, it is also concluded that significant difference exists between experimental group and control group in developing all dependent variables.

CONCLUSION

1. There was a significant improvement on speed, agility and quickness due to the effects of the ladder training among badminton players.
2. There was a significance difference between ladder training group and control group on speed, agility and quickness among badminton players.

REFERENCES

[1] Ladder drills (2016) retrieved from http://www.sport-fitness-advisor.com/ladder-agility-drills.html on august 18

[2] Ladder drills could (2016) retrieved from http://deansomerset.com/speed-ladder-fallacy/ on august 18