

Combined and Isolated Effect of Ladder and Medicine Ball Training on Agility among Football Players

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Abstract

The purpose of this study was to determine the independent and combined effects of medicine ball and ladder training on football players' agility. Due to the study's objectives, 120 high school males were chosen at random to serve as subjects from the Sir Theagaraya College area in Chennai, Tamil Nadu, India. The chosen participants were divided into four groups of thirty ($n=30$) at random. Group I ($n=30$) received ladder training, Group II ($n=30$) received medicine ball training, Group III ($n=30$) received combined training for twelve weeks, three days a week, in addition to the usual schedule, and Group IV ($n=30$) served as the control group, receiving no special training other than what they did for fun. Every participant is made aware of the purpose of the study, and their agreement is sought in order to secure their cooperation through the conclusion of the training and experimental phase. Agility tests were administered to the individuals both before to and during the training session. A shuttle run was used to evaluate agility before and after the training session. The current study used Analysis of Covariance (ANCOVA) as a statistical method. When the adjusted post-test means' "F" ratio was found to be significant at the 0.05 level of significance, the Scheffé S test was employed as a post-hoc test. When compared to the control group, agility is impacted by ladder, medicine ball, and combination training groups. Combined (ladder and medicine ball training) may have better influence on agility of football players.

Keywords: Medicine ball training, ladder training and agility

I.INTRODUCTION

A step workout, which involves executing one or more exercises in a climbing and slipping repetition pattern, might be a type of quality and sports preparation. By completing exercises that emphasize strong continuity and conditioning, you will increase your overall preparation volume while maintaining the proper form and technique. Your muscle quality and endurance will determine how many exercises you do in each session and how long you rest in between sets. While ladders for professionals often feature two or three exercises, stepping stools for novices occasionally just highlight one.

A medicine ball can be the best health tool for control preparation. One of the few pieces of equipment used in gyms that enables athletes to exert extra force at the start of a muscular contraction is the medicine ball. Competitors can increase their initial improvement capacity because of the unique ability of medicine balls, which also helps the body build up and transfer flexible energy. This is the best power-focused pre-workout technique since it makes the muscles far more capable of producing drive in a timely and efficient manner.

Young and Sheppard (2006) Agility may also be defined as "A rapid full body movement with change in speed or direction due to an improvement." Agility is the capacity to rapidly and efficiently alter the body's direction.

Statement of the Problem

The purpose of the study was to find out the combined and isolated effect of ladder and medicine ball training on agility among football players.

Methodology

One hundred and twenty (120) high school boys from the Sir Theagaraya College area in Chennai, Tamil Nadu, India, were chosen at random to serve as research participants. The chosen participants were divided into four groups of thirty (n=30) at random. Group I (n=30) received ladder training, Group II (n=30) received medicine ball training, Group III (n=30) received combined training for twelve weeks, three days a week, in addition to the usual schedule, and Group IV (n=30) served as the control group, receiving no special training other than what they did for fun. Every participant is made aware of the purpose of the study, and their agreement is sought in order to secure their cooperation through the conclusion of the training and experimental phase. Agility tests were administered to the individuals both before to and during the training session. A shuttle run was used to evaluate agility before and after the training session.

Analysis of Data

The data collected prior to and after the experimental periods on agility on, ladder, medicine ball and combined training and control group were analysed and presented in the following table -I.

Table-I
Analysis of covariance on agility of combined and isolated ladder and medicine ball training group and control group

	CT Group	LT Group	MBT Group	Control Group	SOV	SS	df	MS	'F'
Pre-test mean S.D	52.98 4.22	53.08 3.72	53.011 3.33	53.01 3.33	B W	62.08 889.47	3 116	20.69 11.70	1.77
Post-test mean S.D	48.66 3.68	51.15 3.39	51.58 2.88	53.01 3.33	B W	462.42 754.07	3 116	154.14 9.92	15.53*
Adj. Post- Test mean	48.22	49.07	51.18	53.01	B W	257.67 80.28	3 115	85.23 1.07	80.23*

*Significant at 0.05 level of significance. (The table value required for significance at 0.05 level of significance with df 3 and 116 and 3 and 115 were 2.69 and 2.70 respectively).

CT – Combined training group

LT - Ladder training group

MBT – Medicine ball training group

According to Table I, the combined, ladder, medicine ball training group, and control group had pre-test mean agility scores of 52.98, 53.08, 53.01, and 53.01, respectively. The pre-test scores derived "F" value of 1.77 is below the necessary "F" value of 2.69 in order to be considered significant at the 0.05 level. This demonstrates that the individuals' randomized assignment into four groups was successful and that there are no discernible differences between the groups at the beginning. Given that the derived "F" value of 15.53 is higher than the necessary "F" value of 2.69, the post-test score analysis demonstrates that there is a substantial difference between the groups. This demonstrates that the participants' post-test means differ significantly from one another.

Adjusted mean scores are computed and statistically treated after taking into account the groups' before and post-test results. The necessary table "F" value of 2.70 is less than the achieved "F" value of 80.23. This demonstrates that

the twelve weeks of combined agility training with ladder and medicine ball training resulted in a substantial difference in the adjusted averages. Scheffe's Confidence Interval Test is used for post hoc examination of the data since the substantial improvements are documented. Table II presents the findings.

Table-II
Scheffe's Confidence Interval Test Scores on Agility

Adjusted post-test means				Mean Difference	Confidence Interval Value
CT Group	LT Group	MBT Group	Control Group		
48.22	49.07			0.85	0.981
48.22		51.18		2.96*	
48.22			53.01	4.79*	
	49.07	51.18		2.11*	
	49.07		53.01	3.94*	
		51.18	53.01	1.83*	

* Significant at 0.05 level of confidence.

It is noticed that a significant difference exists since the obtained values, with the exception of the combined training and ladder training groups, are more than the necessary value and the confidence interval needed to be significant at the 0.05 level is 0.981. Figure I provide a bar graphic of the ordered adjusted means on agility to help visualize the study's findings.

Figure - I
Adjusted post-test mean values on agility of combined, ladder, medicine ball training group and control groups



II.CONCLUSION

The following inference was made based on the data analysis. When compared to the control group, the research study also demonstrates that both independent and combination ladder and medicine ball exercise improve agility. Furthermore, the test findings indicate that the experimental groups differed significantly in terms of agility. Combining ladder and medicine ball training may have a greater impact on football players' agility.

Recommendations

The present study's findings led to the following recommendations:

1. More research might be done to examine how anthropometric measurements and biochemical variables are affected by ladder and medicine ball training.
2. It is possible to evaluate the physiological effects of ladder training and medicine ball training programs, both separately and in combination.
3. Football players were selected as the study's participants; in further research, hockey, volleyball, basketball, and other sports may be used.

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