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Effect of ladder training on selected physical fitness variables among inter collegiate men Kabaddi players

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Abstract
This study was designed to investigate the effect of ladder training on selected physical fitness variables among inter collegiate men Kabaddi players. To achieve the purpose of the study (N=30) thirty men Kabaddi players were selected from National College, Tiruchirappalli, Tamilnadu, India as subjects. The age of the subjects ranged from 18 to 23 years. The selected subjects were divided into two groups (N=15). Group I underwent ladder training. Group II acted as control group who did not undergo any specialized training program other than their daily routine. The physical fitness variables such as agility and leg balance were selected as dependent variables and they were assessed by shuttle run, and stroke stand respectively. The subjects were concerned with their particular training for a period of six weeks, six days per week. The collected data from two groups prior to and immediately after the training programme on selected criterion variables were statistically analyzed with analysis of covariance (ANOVA). The level of confidence was fixed at 0.05 for all the cases to test the hypothesis. The result of the study reveals that the ladder training group achieved significant improvement on selected physical fitness variables such as agility and balance of inter college men Kabaddi players.

Keywords: Ladder training, agility and balance

Introduction
The nature of the sport requires players to operate at an optimum level in multiple are a as endurance, speed, power, flexibility and agility. So they have to focuses on functional movement strengthening the core is the major objective. Since Kabaddi is extremely physical sports, strengthening the core is crucial. The players have to be alert constantly and run and jump and change the direction quickly. So the game need more of workouts and also need strength to overcome defender. Further experts insisted of in Kabaddi game, namely, ready, reading, reacting, responding and recovering. Thus the game of Kabaddi warrants high level of physical fitness. To improve the physical fitness and overall fitness level, a player aspires involves himself in different exercise ‘on court’ as well as ‘off court’. In this study, the investigator was interested it find out the different training namely such as effect of strengthening exercise and ‘on court drills’ on selected performance variables. The variables selected for this study were, skill performance in Kabaddi was measured subjectively by experts to determine the performance in Kabaddi. Kabaddi drills are an important part in skill acquisition and perfection in Kabaddi they are used by professional Kabaddi coaches at every Kabaddi academy and every Kabaddi camp around the world. They are an invaluable supplementary asset in player development, from peewee Kabaddi players to high level; advanced players (Dhanaraj, 2012) [1].
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 (Viswejan and Mahaboobjan, 2017) [2].

Methodology

To achieve the purpose of the study (N=30) thirty men kabaddi players were selected from affiliated colleges of National College, Tiruchirappalli, Tamilnadu, India as subjects. The age of the subjects ranged from 18 to 23 years. The selected subjects were divided into two groups (N=15). Group I underwent ladder training. Group II acted as control group who did not undergo any specialized training program other than their daily routine. The physical fitness variables such as agility and leg balance were selected as dependent variables and they were assessed by shuttle run, and stroke stand respectively. The subjects were concerned with their particular training for a period of six weeks, six days per week.The collected data from two groups prior to and immediately after the training programme on selected criterion variables were statistically analyzed with Analysis of Covariance (ANOCVA). The level of confidence was fixed at 0.05 for all the cases to test the hypothesis.

Table 1: Criterion Variables and Tests

S. No.	Variables	Test	Unit of Measurements
1.	Agility	Shuttle Run	Seconds
2.	Balance	Stroke Stand	Seconds

Table 2: Analysis of Covariance of Agility on Experimental and Control Group of Men Kabaddi Players (Scores in Seconds)

Test	Exp. Group	Con. Group	Sum of Variance	Sum of Square	Degree of Freedom	Mean Square	'F' Ratio
Pre Test	10.27	10.28	Between	0.01	1	0.014	3.25
			Within	0.03	21	0.01	
Post Test	10.22	10.28	Between	0.01	1	0.014	12.26*
			Within	0.03	21	0.01	
Adjusted Post Test	11.22	11.27	Between	0.01	1	0.014	4.32*
			Within	0.03	21	0.01	

*Significant at 0.05 level of confidence. (Table value with df 1 and 21 and 1 and 21 were 4.32)

The pre, post-test and adjusted post test mean values of speed on experimental group and control group were 10.27, 10.22, 11.22 and 10.28, 10.28, 11.27 respectively. The obtained F value of post-test and adjusted post test were 12.26 was greater than the table value of 4.32. Hence it was proved that there was significant improvements on agility of inter *collegiate men kabaddi players.*

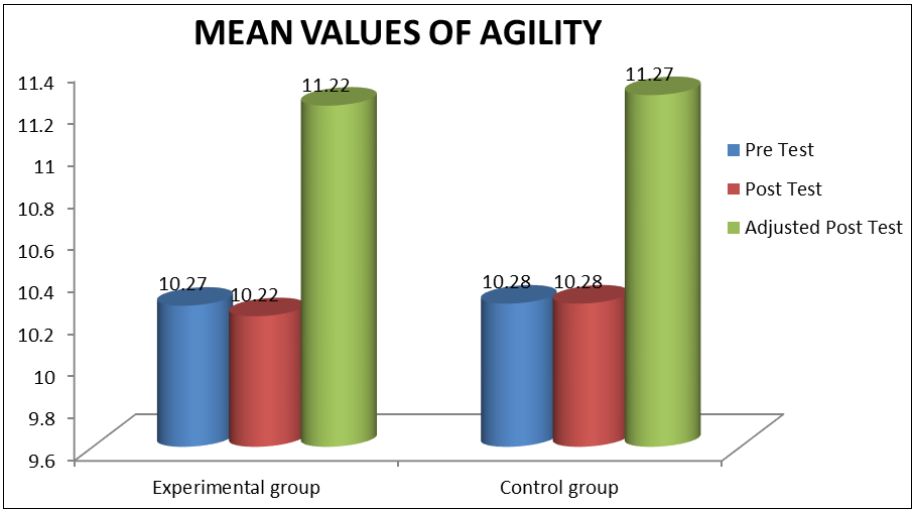

Fig 1: Mean Values of Agility on Experimental and Control Groups

Table 3: Analysis of Covariance of Balance on Experimental and Control Group of Men Kabaddi Players (Scores in Seconds)

Test	Exp. Group	Con. Group	Sum of Variance	Sum of Square	Degree of Freedom	Mean Square	'F' Ratio
Per Test	35.57	35.67	Between	65.12	1	65.12	9.38
			Within	18.84	21	0.88	
Post Test	38.89	35.67	Between	65.12	1	65.12	78.84*
			Within	18.84	21	0.88	
Adjusted Post Test	39.94	34.62	Between	65.12	1	65.12	4.32*
			Within	18.84	21	0.88	

*Significant at 0.05 level of confidence. (Table value with df 1 and 21 and 1 and 21 were 4.32)

The pre, post-test and adjusted post test mean values of speed on experimental group and control group were 35.57, 38.89, 39.94 and 35.67, 35.67, 34.62 respectively. The obtained F value of post-test and adjusted post test were 78.84 was greater than the table value of 4.32. Hence it was proved that there was significant improvements on balance of inter collegiate men Kabaddi players.

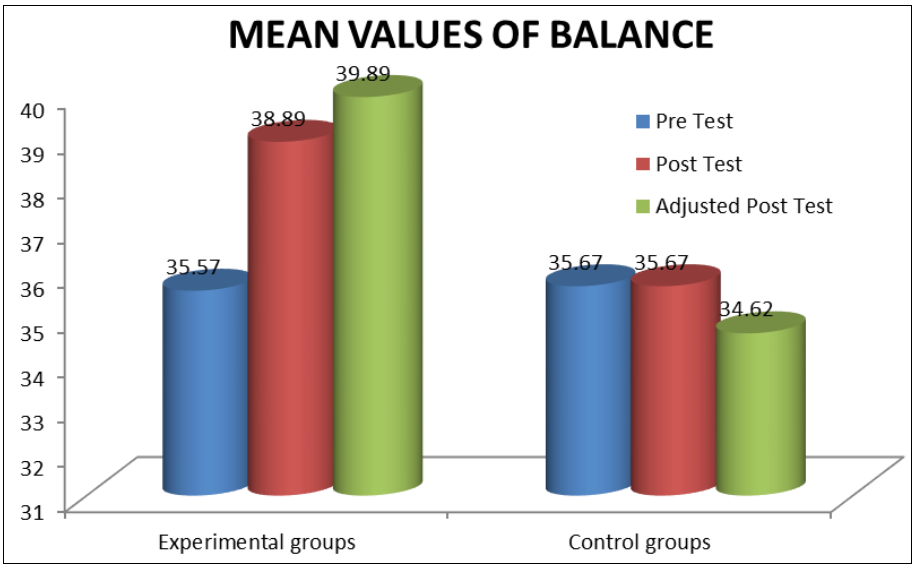

Fig 2: Mean Values of Balance on Experimental and Control Groups

Discussion of Findings

The result of the study indicates that the experimental group namely as ladder training had significantly improved in the selected dependent variables namely as agility and balance. It is also found that the improvement caused by ladder training was better when compared to control group (Nanda Eriko Pratama 2018) [3].

Conclusions

The experimental groups namely as ladder training had achieved significant improvement on selected physical fitness variables such as agility and balance when compared to control group.

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