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Original Research Article

Individualised and Combined Impact of Speed Play and Ladder Training on Selected Bio-Motor Variables among College Men Cricket Players

Mr. K. Deepak Kumar[1*], Dr. P. Kaleeshwaran[2]

[1]Ph.D. Research Scholar, Alagappa College of Physical Education, Alagappa University, Karaikudi, Tamil Nadu, India
[2]Professor, Alagappa College of Physical Education, Alagappa University, Karaikudi, Tamil Nadu, India

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***Corresponding author:** Mr. K. Deepak Kumar
Ph.D. Research Scholar, Alagappa College of Physical Education, Alagappa University, Karaikudi, Tamil Nadu, India

Abstract

The study's intention was to individualised and combined impact of speed play training and ladder training on selected bio-motor variables among college men cricket players. This study aimed to contribute a combination of speed play training and ladder training on cricket players for performance enhancement. ***Objectives:*** The purpose of the study was to individualised and combined impact of speed play training and ladder training on selected bio-motor physiological and performance variables among college men cricket players. ***Materials and methods:*** To achieve the purpose of the study, sixty (60) students participated in the inter collegiate tournament for their respective colleges, affiliated to Hindustan Institute of Technology & Science (Deemed to be University), Chennai in the state of Tamil Nadu, India, India during the year 2022 – 2023 were selected as subjects. The age of the subjects ranged from 18 to 25 years. In which, sixty (60) College students were randomly selected and they randomly assigned into four groups of fifteen (15) subjects each (n = 15). Group I underwent Speed Play Training (SPTG), group II underwent Ladder Training (LTG), group III underwent Combined Speed Play Training and Ladder Training (CSPTALDTG) and group IV acted as Control Group (CG), they were not assigned any specific training, but they were done their regular curricular activities. Their respective training programs for the duration of 12 weeks of 36 morning sessions in addition to their regular programme in their curriculum design. ***Conclusions:*** The study concluded that, control group had not shown significant change in any of the selected variables. The experimental groups namely speed play training, ladder training and Combined speed play and ladder training groups had significantly improved the bio-motor variables. Significant differences were found among speed play training, ladder training and combined speed play and ladder training groups had significantly improved the bio-motor variables. It was also concluded that combined speed play and ladder training group was found to be better than other Experimental groups in developing speed, agility, endurance and explosive power.

Keywords: Speed play, Ladder training and Bio-motor variables.

INTRODUCTION

Physical fitness is a factor in how well a sportsperson performs in any game or event. The five motor skills of muscular strength, agility, power, speed, and cardiovascular endurance make up one's physical condition or fitness(Cureton, 1956). As a result, these skills have a major role in how well athletes succeed in all sports. The primary goal of sports training is to increase and maintain physical fitness. Muscular power, also known as explosive power, is a mix of strength and speed that is crucial for energetic performance since it defines how hard a person can push, jump, and hit, among other things. Agility, which depends on strength, response time, movement speed, and muscular coordination, is the capacity to quickly alter the direction of the body or its parts. Fast starts, pauses, and direction changes are essential for successful sports performance(Binthu Mathavan, 2014).

Cricket is a sport where fitness hasn't historically been regarded as being all that crucial(Evans, 2021). But the world-beating Australian team's success in the 1990s and 2000s has been credited in part to their professionalism and the manner they approach fitness(Westerbeek, Smith, Westerbeek, & Smith, 2005). The other test-playing countries have recently placed a

greater focus on fitness and are seeing the results. The physical demands placed on a cricketer's body have also increased significantly as a result of the introduction of one-day cricket and more recently Twenty20. The significance of fitness will vary depending on the game being played and the function each player plays in the team. For example, a fast bowler will have different and greater fitness needs than an opening batsman, and one-day cricket will be more physically demanding than a test match(Pote, 2018).

Fartlek is a Swedish word that means "speed play." One can improve one's running speed and endurance by engaging in fartlek training, a sort of speed or interval training(Glinski, 1967). Fartlek Luff is the term for running at various speeds while alternating between rapid sprints and leisurely jogs. From novices to professional athletes, fartlek training is a training method that may be utilised to improve levels of general fitness in all age groups. Although fartlek training is typically connected to running, it may be used to nearly any type of training (Glinski, 1967). Variable pacing, alternating between fast and slow sessions, and the ability to choose one's own training tempo as one advance through the workout are all components of fartlek training. Although this fundamental format may be applied to cycling and swimming by simply combining lengthy, slow distance training, pace/tempo training, and interval training, traditional Fartlek style training is connected with raising VO2max during running increments (Kurz, 1997). The study intended to individualised and combined impact of speed play training and ladder training on selected bio-motor variables among college men cricket players.

MATERIALS AND METHODS

Subjects

The purpose of the study was to individualised and combined impact of speed play training and ladder training on selected bio-motor physiological and performance variables among college men cricket players. To achieve the purpose of the study, from the population of 170 College students from Chennai District HITS Colleges only sixty (60) students participated in the inter collegiate tournament for their respective colleges, affiliated to Hindustan Institute of Technology & Science (Deemed to be University), Chennai in the state of Tamil Nadu, India, India during the year 2022 – 2023 were selected as subjects. The age of the subjects ranged from 18 to 25 years.

Experimental design

In which, sixty (60) College students were randomly selected and they randomly assigned into four groups of fifteen (15) subjects each (n = 15). Group I underwent Speed Play Training (SPTG), group II underwent Ladder Training (LTG), group III underwent Combined Speed Play Training and Ladder Training (CSPTALDTG) and group IV acted as Control Group (CG), they were not assigned any specific training, but they were done their regular curricular activities.

The experimental groups namely speed play training, ladder training, combined speed play training and ladder training their respective training programs for the duration of 12 weeks of 36 morning sessions in addition to their regular programme in their curriculum design. The subjects were unfamiliar with the particular specialised training, therefore in order to educate them, three classes were given on the value and necessity of research work, as well as the pros and cons of the training curriculum. The subjects signed the consent form that was included with the research-based data. There were a number of questions made by the subjects, which the researcher answered. The researcher also advised the subjects that they were free to leave the training programme at any time if they felt uncomfortable during the training and testing period, but there were no dropouts in the training session. Additionally, they had enough rest and respite prior to and throughout training sessions. The participants' attendance was recorded at each training session for their individual experimental groups.

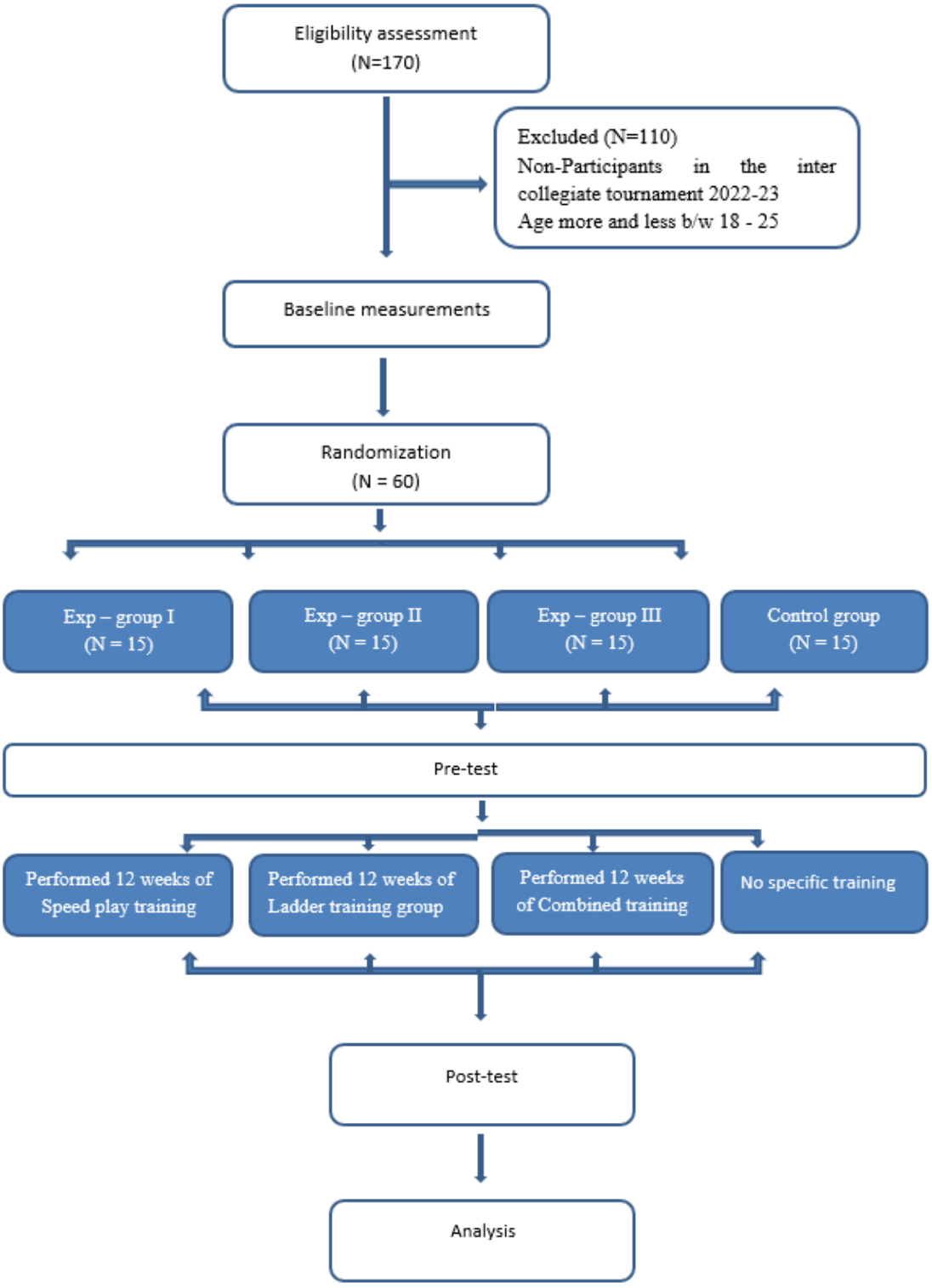
Training programme

For a period of 12 weeks, the experimental groups had to complete three sessions each week on alternate days (Monday, Wednesday, and Friday for speed play training, Tuesday, Thursday, and Saturday for ladder training, and Wednesday, Friday, and Sunday for combined speed play and ladder training). Consequently, the programme included 36 training sessions. However, each training session lasts 90 minutes and is the same for all three groups. To start each training session, a typical warm-up programme that included stretching, callisthenics, and running was performed. The members of the three groups received instruction on proper exercise technique as well as safe body and trunk exercises prior to the start of the training programmes. Appendices I, II, and III outline the exercises chosen for the experimental group, including speed play training, ladder training, and combined speed play and ladder training.

Testing procedure

The data on speed, agility, endurance, and explosive power Data for the pre-test and post-test were obtained two days before and after the training programme, respectively. Due to the larger number of dependent variables in both situations, the data collection took place over the course of two days. The morning sessions were used to administer each test.

Flow chart showing the stages of the study



1. Speed (30 mts dash)

The subject was asked to stand behind the starting line and instructed to start with a standing start. On hearing the clapper sound, the subject had to run the required distance with maximum effort. The best time out of two trials was recorded as the individual's score (Young *et al.,* 2008)**.**

2. Illinois Agility Test (IAT)

The course has a 10-metre length and a 5-metre width. The start, finish line, and the two turning points are all marked with four cones. Four additional cones are positioned down the middle, spaced equally apart. The distance between each cone in the centre is 3.3 metres. Participants should lay on their front with their hands by their shoulders and heads towards the starting line. The

subject stands up as quickly as possible and runs around the course in the direction specified without knocking the cones over until they reach the finish line, where the timer is stopped. The time taken in seconds to finish the entire course is recorded (Muniroglu & Subak, 2018).

3. Endurance (cooper's 12 minutes run)

The subjects were assigned to each spotter. The subjects started behind a line and upon the starting signal, run as many laps possible around the track within 12 minutes. The spotters maintained a count of each lap. When the signal to stop is given the subject stop running. The spotter immediately ran to the subject and recorded the distance. The score in meters in determined by multiplying the number of laps completed, plus the number of segments of and lap, plus the meters stopped off between a particular segment (Cooper, 1968).

4. Explosive power (Seated Medicine Ball Throw)

The athlete is seated on the floor with his back against a wall, legs fully extended, and feet spaced 24 inches (60 cm) apart. The ball is held with the back against the centre of the chest, hands on the side, and somewhat behind the centre. With their forearms parallel to the floor. The athlete keeps his back against the wall and throws the medicine ball as far forward and straight as he can. The throwing distance is noted. The ball's landing spot's distance from the wall is measured. Other protocols have used the nearest 0.5 foot or 10 cm, but this protocol records the measurement to the nearest centimetre. The best outcome from the three throws is chosen (Kumar, Singh, Apte, & Kolekar, 2021).

Statistical Techniques

Descriptive statistics and the paired sample't' test were used for data analysis. There was never any attempt to compare the groups in any way. Therefore, the analysis of covariance (ANCOVA) was employed to correct for differences in the original means and test the adjusted posttest means for significant differences. To ascertain which of the paired means, the Scheffe's test was applied as a post-hoc test. When using univariate ANCOVA, the groups' adjusted posttest means that were substantially different from one another. The significance level for each of the aforementioned statistical analysis tests was set at 0.05 (P0.05).

RESULTS

SPEED

Table –1: The Summary of Mean and Dependent 'T' Test for the Pre and Post Tests on Speed of Experimental and Control Groups

Mean	SPTG Group – (I)	LTG Group – (II)	CSPTALDTG Group – (III)	CG Group – (IV)
Pre- test	4.53	4.54	4.54	4.54
SD (±)	0.01	0.01	0.01	0.01
Post-test	4.36	4.37	4.30	4.50
SD (±)	0.09	0.09	0.01	0.08
't'-test	**7.27***	**6.80***	**46.12***	**1.86**

**** Significant at .05 level. (Table value required for significance at 0.05 level for't'-test with df 14 is 2.15) (Speed in seconds.)***

The paired sample 't' was computed on selected dependent variables. The results are presented in the above Table 1. The 't' test value of speed play training group, ladder training group, combined speed play training and ladder training group and control group are 7.27, 6.80, 46.12 and 1.86 for speed. The experimental't' values are significantly higher than the required table value of 2.15 with degrees of freedom 14 at .05 level of confidence. The 't' test value of control group is 1.86 which is less than the required table value, it indicates that there was not significant improvement on speed performance due to they were not subjected to any specific training. The result of the study shows that speed play training group, ladder training group, combined speed play training and ladder training group has significantly improved the performance of speed. The one-way analysis of covariance on speed of experimental and control groups has been analyzed and presented in Table 1.1.

Table – 1.1: Values of Analysis of Covariance for Experimental Groups and Control Group on Speed

Adjusted post-test means								
SPTG	**LTG**	**CSPTALDTG**	**CG**	**SOV**	**SS**	**Df**	**MS**	**F-ratio**
4.36	4.37	4.30	4.50	**B. S**	0.32	3	0.10	17.15*
				W. S	0.34	55	0.006	

**** Significant at. .05 level of confidence (The table value required for Significance at 0.05 level with df 3 and 55 is 2.77).***

Table-1.1 shows that the adjusted post-test mean value of speed for speed play training group, ladder training group, combined speed play training and ladder training group and control group are 4.36, 4.37, 4.30 and

4.50 respectively. The obtained F-ratio of 17.15 for the adjusted post-test mean is more than the table value of 2.77 for df 3 and 55 required for significance at .05 level of confidence. The results of the study indicate that there are significant differences between the experimental groups and control group on speed.

To determine which of the paired means had a significant difference, Scheffe's test was applied as Post hoc test and the results are presented in Table-1.2

Table – 1.2: The Scheffe's Test for the Differences Between the Adjusted Post Tests Paired Means on Speed

Adjusted post-test means					
SPTG	**LTG**	**CSPTALDTG**	**CG**	**MD**	**CI**
4.36	4.37	---	---	**0.01**	**0.05**
4.36	---	4.30	---	**0.06***	
4.36	---	---	4.50	**0.14***	
---	4.37	4.30	---	**0.07***	
---	4.37	---	4.50	**0.13***	
---	---	4.30	4.50	**0.20***	

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

The above Table shows that the adjusted post-test mean differences on speed play training group and combined training group, speed play training group and control group, ladder training group and combined training group, ladder training group and control group & combined training group and Control group are 0.06, 0.14, 0.07, 0.13 and 0.20 respectively and they are greater than the confidence interval value .05 which shows significant differences between the experimental groups and control group at .05 level of confidence.

The adjusted post-test mean of speed play training group and ladder training is 0.01 which is less than the confidence interval value of 0.05. It shows that there was no significant difference between speed play training group and ladder training group.

The results of the study further have revealed that there were significant differences between the adjusted post-test means of speed play training group and combined training group, speed play training group and control group, ladder training group and combined training group, ladder training group and control group & combined training group and Control group on speed.

However, the improvement in speed was significantly higher for combined training group than other experimental groups. It may be concluded that the combined training group has exhibited better than the other experimental groups in improving speed.

AGILITY

Table – 2: The Summary of Mean and Dependent'T' Test for the Pre and Post Tests on Agility of Experimental and Control Groups

Mean	**SPTG Group – (I)**	**LTG Group – (II)**	**CSPTALDTG Group – (III)**	**CG Group – (IV)**
Pre- test	18.48	18.32	18.54	18.52
SD(±)	0.36	0.32	0.33	0.26
Post-test	17.25	17.19	16.70	18.11
SD(±)	0.36	0.43	0.32	0.84
't'-test	**8.19***	**8.51***	**20.72***	**1.68**

**** Significant at .05 level. (Table value required for significance at .05 level for't'-test with df 14 is 2.15) (Agility in seconds.)***

The paired sample 't' was computed on selected dependent variables. The results are presented in the above Table 2. The 't' test value of speed play training group, ladder training group, combined speed play training and ladder training group are 8.19, 8.51 and 20.72 for agility. The experimental't' values are significantly higher than the required table value of 2.15 with degrees of freedom 14 at .05 level of confidence. The 't' test value of control group is 1.68 which is less than the required table value, it indicates that there was not significant improvement on agility due to they were not subjected to any specific training. The result of the study shows that speed play training group, ladder training group, combined speed play training and ladder training group has significantly improved the performance of agility. The one-way analysis of covariance on agility of experimental and control groups has been analyzed and presented in Table 2.1.

Table – 2.1: Values of Analysis of Covariance for Experimental Groups and Control Group on Agility

Adjusted post-test means								
SPTG	**LTG**	**CSPTALDTG**	**CG**	**SOV**	**SS**	**Df**	**MS**	**F-ratio**
17.25	17.19	16.70	18.11	**B.S**	15.38	3	5.12	17.47*
				W.S	16.13	55	0.29	

**** Significant at. .05 level of confidence (The table value required for Significance at .05 level with df 3 and 55 is 2.77*).**

Table-2.1 shows that the adjusted post-test mean value of agility for speed play training group, ladder training group, combined speed play training and ladder training group and control group are 17.25, 17.19, 16.70 and 18.11 respectively. The obtained F-ratio of 17.47 for the adjusted post-test mean is more than the table value of 2.77 for df 3 and 55 required for significance at .05 level of confidence. The results of the study indicate that there are significant differences between the experimental groups and control group on agility.

To determine which of the paired means had a significant difference, Scheffe's test was applied as Post hoc test and the results are presented in Table-2.3.

Table – 2.3: The Scheffe's Test for the Differences Between the Adjusted Post Tests Paired Means on Agility

Adjusted post-test means					
SPTG	**LTG**	**CSPTALDTG**	**CG**	**MD**	**CI**
17.25	17.19	---	---	**0.06**	**0.47**
17.25	---	16.70	---	**0.55***	
17.25	---	---	18.11	**0.86***	
---	17.19	16.70	---	**0.49***	
---	17.19	---	18.11	**0.92***	
---	---	16.70	18.11	**1.41***	

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

The above Table-shows that the adjusted post-test mean differences on speed play training group and combined training group, speed play training group and control group, ladder training group and combined training group, ladder training group and control group & combined training group and Control group are 0.55, 0.86, 0.49, 0.92 and 1.41 respectively and they are greater than the confidence interval value 0.47 which shows significant differences between the experimental groups and control group at .05 level of confidence.

The adjusted post-test mean of speed play training group and ladder training is 0.06 which is less than the confidence interval value of 0.47. It shows that there was no significant difference between speed play training group and ladder training group.

The results of the study further have revealed that there were significant differences between the adjusted post test means of speed play training group and combined training group, speed play training group and control group, ladder training group and combined training group, ladder training group and control group & combined training group and Control group on agility.

However, the improvement in agility was significantly higher for combined training group than other experimental groups. It may be concluded that the combined training group has exhibited better than the other experimental groups in improving agility.

ENDURANCE

Table – 3: The Summary of Mean and Dependent 'T' Test for the Pre and Post Tests on Endurance of Experimental and Control Groups

Mean	**SPTG Group – (I)**	**LTG Group – (II)**	**CSPTALDTG Group – (III)**	**CG Group – (IV)**
Pre- test	2205	2205	2216	2210
SD(±)	41.27	41.27	37.96	37.56
Post-test	2403	2391	2510	2252
SD(±)	121.11	119.67	54.87	100.90
't'-test	**6.33***	**6.17***	**16.40***	**1.46**

**** Significant at .05 level. (Table value required for significance at .05 level for't'-test with df 14 is 2.15) (Endurance in meters.)***

The paired sample 't' was computed on selected dependent variables. The results are presented in the above Table 3 The 't' test value of speed play training group, ladder training group, combined speed play training and ladder training group are 6.33, 6.17 and 16.40 for endurance. The experimental 't' values are

significantly higher than the required table value of 2.15 with degrees of freedom 14 at .05 level of confidence. The 't' test value of control group is 1.46 which is less than the required table value, it indicates that there was not significant improvement on endurance due to they were not subjected to any specific training. The result of the study shows that speed play training group, ladder training group, combined speed play training and ladder training group has significantly improved the performance of endurance. The one way analysis of covariance on endurance of experimental and control groups has been analyzed and presented in Table 3.1.

Table – 3.1.: Values of Analysis of Covariance for Experimental Groups and Control Group on Endurance

Adjusted post-test means								
SPTG	**LTG**	**CSPTALDTG**	**CG**	**SOV**	**SS**	**Df**	**MS**	**F-ratio**
2405	2392	2509	2253	**B.S**	494657.39	3	164885.79	**15.52***
				W.S	584339.110	55	10624.347	

**** Significant at. .05 level of confidence (The table value required for Significance at .05 level with df 3 and 55 is 2.77*).**

Table-3.1 shows that the adjusted post test mean value of endurance for speed play training group, ladder training group, combined speed play training and ladder training group and control group are 2405, 2392, 2509 and 2253 respectively. The obtained F-ratio of 15.52 for the adjusted post test mean is more than the table value of 2.77 for df 3 and 55 required for significance at .05 level of confidence. The results of the study indicate that there are significant differences between the experimental groups and control group on endurance.

Table – 3.2: The Scheffe's Test for the Differences Between the Adjusted Post Tests Paired Means on Endurance

Adjusted post-test means					
SPTG	**LTG**	**CSPTALDTG**	**CG**	**MD**	**CI**
2405	2392	---	---	**13**	**98.88**
2405	---	2509	---	**104***	
2405	---	---	2253	**152***	
---	2392	2509	---	**117***	
---	2392	---	2253	**139***	
---	---	2509	2253	**256***	

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

The above Table shows that the adjusted post-test mean differences on speed play training group and combined training group, speed play training group and control group, ladder training group and combined training group, ladder training group and control group & combined training group and Control group are 104, 152, 117, 139 and 256 respectively and they are greater than the confidence interval value 98.88 which shows significant differences between the experimental groups and control group at .05 level of confidence.

The adjusted post-test mean of speed play training group and ladder training is 13 which is less than the confidence interval value of 98.99. It shows that there was no significant difference between speed play training group and ladder training group.

The results of the study further have revealed that there were significant differences between the adjusted post-test means of speed play training group and combined training group, speed play training group and control group, ladder training group and combined training group, ladder training group and control group & combined training group and Control group on endurance.

However, the improvement in endurance was significantly higher for combined training group than other experimental groups. It may be concluded that the combined training group has exhibited better than the other experimental groups in improving endurance.

EXPLOSIVE POWER

Table – 4.: The Summary of Mean and Dependent 'T' Test for the Pre and Post Tests on Explosive Power of Experimental and Control Groups

Mean	**SPTG Group – (I)**	**LTG Group – (II)**	**CSPTALDTG Group – (III)**	**CG Group – (IV)**
Pre- test	4.80	4.81	4.77	4.79
SD(±)	0.05	0.06	0.05	0.06
Post-test	5.18	5.20	5.31	4.85
SD(±)	0.21	0.22	0.05	0.19
't'-test	**7.11***	**6.69***	**29.78***	**1.46***

**** Significant at .05 level. (Table value required for significance at .05 level for't'-test with df 14 is 2.15) (explosive power in meters.)***

The paired sample 't' was computed on selected dependent variables. The results are presented in the above Table 4. The 't' test value of speed play training group, ladder training group, combined speed play training and ladder training group are 7.11, 6.69 and 29.78 for explosive power. The experimental't' values are significantly higher than the required table value of 2.15 with degrees of freedom 14 at .05 level of confidence. The 't' test value of control group is 1.46 which is less than the required table value, it indicates that there was not significant improvement on explosive power due to they were not subjected to any specific training. The result of the study shows that speed play training group, ladder training group, combined speed play training and ladder training group has significantly improved the performance of explosive power. The one-way analysis of covariance on explosive power of experimental and control groups has been analyzed and presented in Table 4.1.

Table – 4.1: Values of Analysis of Covariance for Experimental Groups and Control Group on Explosive Power

Adjusted post-test means								
SPTG	**LTG**	**CSPTALDTG**	**CG**	**SOV**	**SS**	**Df**	**MS**	**F-ratio**
5.18	5.18	5.34	4.86	**B.S**	1.83	3	0.61	19.40*
				W.S	1.72	55	0.03	

**** Significant at. .05 level of confidence (The table value required for Significance at .05 level with df 3 and 55 is 2.77*).**

Table-4.1 shows that the adjusted posttest mean value of explosive power for speed play training group, ladder training group, combined speed play training and ladder training group and control group are 5.18, 5.18, 5.34 and 4.86 respectively. The obtained F-ratio of 19.40 for the adjusted post test mean is more than the table value of 2.77 for df 3 and 55 required for significance at .05 level of confidence. The results of the study indicate that there are significant differences between the experimental groups and control group on explosive power.

Table – 4.2: The Scheffe's Test for the Differences Between the Adjusted Post Tests Paired Means on Explosive Power

Adjusted post-test means					
SPTG	**LTG**	**CSPTALDTG**	**CG**	**MD**	**CI**
5.18	5.18	---	---	**0.00**	**0.13**
5.18	---	5.34	---	**0.16***	
5.18	---	---	4.86	**0.32***	
---	5.18	5.34	---	**0.16***	
---	5.18	---	4.86	**0.32***	
---	---	5.34	4.86	**0.48***	

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

Table-4.2 shows that the adjusted post-test mean differences on speed play training group and combined training group, speed play training group and control group, ladder training group and combined training group, ladder training group and control group & combined training group and Control group are 0.16, 0.32, 0.16, 0.32 and 0.48 respectively and they are greater than the confidence interval value 0.13 which shows significant differences between the experimental groups and control group at .05 level of confidence.

The adjusted post-test mean of speed play training group and ladder training is 0.00 which is less than the confidence interval value of 0.13. It shows that there was no significant difference between speed play training group and ladder training group.

The results of the study further have revealed that there were significant differences between the adjusted post test means of speed play training group and combined training group, speed play training group and control group, ladder training group and combined training group, ladder training group and control group & combined training group and control group on explosive power.

However, the improvement in explosive power was significantly higher for combined training group than other experimental groups. It may be concluded that the combined training group has exhibited better than the other experimental groups in improving explosive power.

Discussing on Findings

The results of the study indicated that the experimental groups namely speed play training, ladder training and combined speed play and ladder training groups had significantly influenced of the selected variables such as speed, agility, endurance, explosive power of experimental groups had undergone systematic training over 12 weeks duration. The control group had not shown significant improvement on any of the selected variables as they have not subjected to any of the specific training/conditioning similar to that of

experimental groups. Hence it is understood that the selected training means had influenced on the criterion variables.

The results of the study indicate that the speed play training, ladder training and combined speed play and ladder training groups showed significant improvement in Bio-motor variables when compared with control group. Hence, twelve weeks of speed play training, ladder training and combined speed play and ladder training groups showed considerable improvement in speed, agility, endurance and explosive power among cricket players. At the same time when the three experimental groups were compared, the combined speed play and ladder training group showed significant improvement on bio-motor variables such as speed, agility, endurance and explosive power. Hence, the combined speed play and ladder training group schedule has influenced bio-motor variables. The results of the study are in conformity with the findings of Pramod and Divya (2023), Thomas and Shah (2022), Mahesh (2022), Vineedkumar (2022), Trevor *et al.,* (2022), Selvakumar (2022), Hemanshi *et al.,* (2022) Suhail Rehman (2022), Arulmozhi (2021), Madan Mohan (2021), Antony and Rakesh Tomar (2021), Salgaonkar *et al.,* (2020), Ramya and Rajalakshmi (2019).

CONCLUSIONS

The control group had not shown significant change in any of the selected variables. The experimental groups namely speed play training, ladder training and Combined speed play and ladder training groups had significantly improved the bio-motor variables such as speed, agility, endurance and explosive power. Significant differences were found among speed play training, ladder training and combined speed play and ladder training groups had significantly improved the bio-motor variables such as speed, agility, endurance, and explosive power It was concluded that combined speed play and ladder training group was found to be better than other Experimental groups in developing speed, agility, endurance and explosive power.

REFERENCES

1. Binthu Mathavan, S. (2014). *Effect of plyometric and core training on selected physical physiological and skill related performance variables among men football players.* Department of Physical Education and Sports,
2. Cooper, K. H. (1968). A means of assessing maximal oxygen intake: correlation between field and treadmill testing. *Jama, 203*(3), 201-204.
3. Cureton, T. K. (1956). Relationship of physical fitness to athletic performance and sports. *Journal of the American Medical Association, 162*(12), 1139-1149.
4. Evans, G. A. (2021). *" Who Only Cricket Know": Sport, Ideology and Emancipatory Politics*: Boise State University.
5. Glinski, J. V. (1967). *A comparative study of Fartlek, interval, and sprint training*: Indiana University.Kumar, A., Singh, R. K., Apte, V. V., & Kolekar, A. (2021). Comparison between seated medicine ball throw test and Wingate test for assessing upper body peak power in elite power sports players. *Indian Journal of Physiology and Pharmacology, 64*(4), 286-291.
6. Kurz, M. J. (1997). The relationship of training methods between NCAA Division I Cross-Country runners with 10,000 meter performance.
7. Muniroglu, S., & Subak, E. (2018). A Comparison of 5, 10, 30 Meters Sprint, Modified T-Test, Arrowhead and Illinois Agility Tests on Football Referees. *Journal of Education and Training Studies, 6*(8), 70-76.
8. Pote, L. (2018). Strength and conditioning of adolescent male cricket players.
9. Westerbeek, H., Smith, A., Westerbeek, H., & Smith, A. (2005). Staying Ahead of the Game: Developing Leaders for the Future. *Business Leadership and the Lessons from Sport*, 159-185.
10. Young, W., Russell, A., Burge, P., Clarke, A., Cormack, S., & Stewart, G. (2008). The use of sprint tests for assessment of speed qualities of elite Australian rules footballers. *International journal of sports physiology and performance, 3*(2), 199-206.
11. Pramod, R., and Divya, K.(2023). Potential role of circuit training and ladder training in the development of anaerobic power and explosive performance of school students. *Journal of Pharmaceutical Negative Results*, 14 (2), 1783-1792.
12. Thomas, R., and Shah, D.N (2022). effect of ladder training on speed and explosive power among subelite cricket players. *International Journal of Creative Research Thoughts*, 10 (11), 859-870.
13. Mahesh, P (2022). effects of ladder and plyometric training on agility among cricket players. *EPRA International Journal of Research and Development*, 7(4), 167-170.
14. Selvakumar, P. (2022) Impact of agility ladder training on coordination and speed endurance among football players. *International Journal of Physical Education, Sports and Health* 9(4), 153-15.
15. Hemanshi, K., Rushi, G., & Gaurav, P. (2022). Effect of plyometric training and agility ladder training on agility, speed and jump performance in tennis players. *Parul University Journal of Health Sciences and Research*, 1(1), 32–38.
16. Mahesh, P (2022). effects of ladder and plyometric training on agility among cricket players. *EPRA International Journal of Research and Development*, 7(4), 167-170
17. Suhail Ur Rehman (2022). Effect of circuit and interval trainings on selected motor fitness physiological and psychological variables among kashmir division cricket players (Doctoral dissertation, Annamalai University, 2022).

18. Arulmozhi, S. (2021). Efficacy of Fartlek Training on selected Physical and Psychological Variables Among the RSA in Trichy. *International journal of innovative research in technology*, 8(5), 333-336.
19. Madan Mohan, M. (2021). Effect of fartlek training on selected physical variables among college students. *International Journal of Computational Research and Development,* 6(1), 15–17.
20. Antony, V.C., and Rakesh Tomar. (2021). assessing the effect of fartlek training on perceived wellness of university students of saudi arabia: a randomized controlled trial. *International Journal of Pharmaceutical Sciences and Research,* 10(11), 5051-5056.
21. Ramya, R., and Rajalakshmi, D. (2019). Effect of fartlek training on selected physical fitness and skill performance variables among intercollegiate level hockey players. *International Journal of Current Research*, 11(09), 7404-7407.