EFFECT OF REPEATED SEVEN SECONDS PHOSPHATE RECOVERY DRILL TRAINING ON SPEED AND AGILITY OF TRIPURA CRICKETERS

Dr. Deepak Kumar Dogra
Director (Operation), Laxmibai Sports Education & Welfare Society, New Delhi (INDIA)

ABSTRACT

To evaluate the effectiveness of 12 weeks repeated seven seconds phosphate recovery drill training on speed and agility among selected Tripura cricketers. Pre test – post test randomized group design were undertaken for the present study which consist of an experimental group and control group. Equal number of subjects (n= 30) were assigned randomly to both the groups. The experimental group was exposed to 12 weeks repeated seven seconds phosphate recovery drill training programme whereas, no treatment was given to control group. For the purpose of the present research work a total of 60 cricketers were randomly selected for the present research work subjects had represented Tripura Cricket Association (Affiliated to BCCI) in several national tournaments. Speed & agility was selected as a dependent variable and 12 weeks repeated seven seconds phosphate recovery drill training programme was considered as an independent variable. The data was analyzed by applying analysis of co-variance and post hoc test was used to draw appropriate conclusions and to find out the effect of 12 weeks repeated seven seconds phosphate recovery drill training programme on speed and agility variables among selected Tripura cricketers. The significance level was set at 0.05. The results indicated that there was significant difference found in experimental group selected Tripura state cricketers on speed & agility variables in comparison to control group. The findings of this study showed that 12 weeks repeated seven seconds phosphate recovery drill training programme was an effective training tool to improve a cricketers’ speed and agility abilities.

Keywords: Phosphate, recovery, training, speed, agility and cricketers
INTRODUCTION

In the research literature, sprinting skills are commonly categorized as linear sprint, agility and repeated sprint ability (RSA). Linear sprint is the ability to accelerate and maintain a high linear sprint speed (Chapman et al. 2011). Agility refers to the ability to rapidly change direction and speed of movement as a result of a stimulus (Bishop et al. 2011). RSA is the ability to perform repeated sprints with brief recovery intervals (Bishop et al. 2011; and Glaister et al. 2005). Several studies have concluded that agility and linear sprint are specific and independent qualities (Little et al. 2005; Sporis et al. 2010; Vescovi et al. 2008; and Young et al. 2001). All of these skills are necessary to complete in almost any sport or activity or training sessions now across the world. It is used to improve the specific sport and it is important that the player repeats the exact body mechanics that they have performed on the field. It is also maintained the correct body mechanics, so that the drills correctly reflect the movements in the sport to avoid creating bad habits.

Unfortunately, only a few intervention studies including agility or repeated sprint training of elite or professional soccer players have been reported. Mujika et al. (2009) indicated an improvement in 15 m sprint and vertical jump performance after 6 training sessions with repeated short sprints. Similarly, Spinks et al. (2007) also observed that short-sprint training with and without resistance over 8 weeks improved 15 m sprint and counter-movement vertical jump (CMJ vertical jump) performance. However, Jovanovic et al. (2011) founded improved 5 – 10 m sprint and CMJ vertical jump performance after an 8-week conditioning period consisting of speed, agility and quickness. Moreover, Wong et al. (2012) only reported a relationship between repeated sprint ability and repeated change of direction. Therefore, it should be in the interest of coaches, trainers and players to investigate whether repeated agility training within a similar periodization model to repeated sprint training can lead to equivalent or even superior outcomes. Thus, the conditioning exercises should become more specifically tailored to the sport. The main purpose of this study was to determine the effectiveness of 12 weeks repeated seven seconds phosphate recovery drill training on speed and agility among selected Tripura cricketers.

DESIGN

For the present study pre test – post test randomized group design which consisted of experimental group (n = 30) and control group (n = 30). Equal numbers of subjects were assigned randomly to both the groups. One group served as experimental group on which treatment was administered. The other group served as the control group.

METHODOLOGY

For the purpose of the present research work a total of 60 cricketers were randomly selected. These subjects had represented Tripura Cricket Association (Affiliation to BCCI) in several national tournaments. The age of the subjects were ranging from 19 years to 31 years. The average age was being 25 years. Speed and agility were selected as a dependent variable and 12 weeks specific conditioning programme training was considered as an independent variable. Speed and agility was measured in seconds rounded off 0.01 second by using electronic digital stop watch (Casio 100-lap). To test speed and agility, 40 meters sprint test and 10 meters shuttle run test were respectively administrated for Tripura cricketers.12 weeks repeated seven seconds phosphate recovery drill training programme was administered three times a week on experimental group at M.B.B. Stadium in Agartala for a period of 12 weeks (84 days) while the control group underwent general training and regular cricketing practice. Before the administration of training programme, 40 meter sprint test (speed) and 10 meter shuttle run test (agility) were respectively administrated at same venue on both
the group’s namely experimental group and control group respectively to collect pre test data. After the completion of 12 weeks training programme again the same speed and agility tests were conducted to collect the post training data. Analysis of co-variance and post hoc test were computed to analyze the data and the significance level was set at 0.05.

FINDINGS

The findings of the study are given below:

Table 1.0: Analysis of Covariance on the Data of Speed and Agility Variables among Selected Groups

<table>
<thead>
<tr>
<th>Source of Variance</th>
<th>Group Means</th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Sum of Square</th>
<th>‘F’</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Experimental</td>
<td>Control</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre Test Means (Speed)</td>
<td>5.96</td>
<td>5.97</td>
<td>B = 0.00</td>
<td>B = 1</td>
<td>B = 0.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>W = 3.62</td>
<td>W = 58</td>
<td>W = 0.06</td>
</tr>
<tr>
<td>Post Test Means (Speed)</td>
<td>5.73</td>
<td>5.96</td>
<td>B = 0.79</td>
<td>B = 1</td>
<td>B = 0.79</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>W = 3.26</td>
<td>W = 58</td>
<td>W = 0.06</td>
</tr>
<tr>
<td>Adjusted Post Test Means</td>
<td>5.74</td>
<td>5.96</td>
<td>B = 0.72</td>
<td>B = 1</td>
<td>B = 0.72</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>W = 0.70</td>
<td>W = 57</td>
<td>W = 0.01</td>
</tr>
<tr>
<td>Pre Test Means (Agility)</td>
<td>8.96</td>
<td>8.76</td>
<td>B = 0.63</td>
<td>B = 1</td>
<td>B = 0.63</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>W = 4.54</td>
<td>W = 58</td>
<td>W = 0.08</td>
</tr>
<tr>
<td>Post Test Means (Agility)</td>
<td>8.61</td>
<td>8.74</td>
<td>B = 0.24</td>
<td>B = 1</td>
<td>B = 0.24</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>W = 4.03</td>
<td>W = 58</td>
<td>W = 0.07</td>
</tr>
<tr>
<td>Adjusted Post Test Means</td>
<td>8.59</td>
<td>8.75</td>
<td>B = 1.19</td>
<td>B = 1</td>
<td>B = 1.19</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>W = 0.74</td>
<td>W = 57</td>
<td>W = 0.01</td>
</tr>
</tbody>
</table>

B = Between Group Variance
W = Within Group Variance
N = 60
*Significant at 0.05 level. ‘F’ 0.05 (1, 57) = 4.00

Table 1.0 exhibited a highly significant group effect found in speed and agility variables among experimental and control groups such as speed (‘F’1, 57 = 58.27) and agility (‘F’1, 57 = 91.15) against the tabulated value of ‘F’1, 57 = 4.00 at 0.05 level.

The post hoc test was applied as an extension of analysis of covariance to find out the paired mean significant difference between adjusted group post test means for experimental group and control group. The findings related to analysis are presented in table 1.1.
Table 1.1: Adjusted Post Test Means and Difference between Means of Experimental and Control Group of Speed and Agility Variables

<table>
<thead>
<tr>
<th>Motor Fitness Variables</th>
<th>Experimental Group - A</th>
<th>Control Group - B</th>
<th>Mean Difference</th>
<th>Critical Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed (Seconds)</td>
<td>Post Test Means</td>
<td>5.74</td>
<td>5.96</td>
<td>-0.22*</td>
</tr>
<tr>
<td>Agility (Seconds)</td>
<td>Post Test Means</td>
<td>8.59</td>
<td>8.75</td>
<td>-0.16*</td>
</tr>
</tbody>
</table>

*Significant at 0.05 level.

Table 1.1 indicates that the 12 weeks repeated seven seconds phosphate recovery drill training induced to experimental group consist of selected Tripura state cricketers on speed and agility variables were found statistically significant in comparison to control group.

The graphical representation of the paired adjusted final means of experimental and control group for speed and agility, are presented in figures (i.e.,1.0 and 1.1).

**DISCUSSION**

The findings of this study showed that 12 weeks of repeated seven seconds phosphate recovery drill training was an effective training technique to improve a cricketer’s speed and agility abilities. Cricket is a game of power, speed and quick reflexes required to excel and dominate in this arena could be the fact the experimental group were taken the researcher’s prescribed 12 weeks of repeated seven seconds sprint phosphate recovery drill training very seriously in which they were involved in to practicing intensive sprint drills with detailed time of seven seconds sprints with incomplete 25, 23 and 20 seconds sports specific recovery respectively between 20 repetitions set. This fact could be the main reason for highly significant group differences results, as in the experimental group Tripura cricketers to develop speed and agility variables. However, due to the fact, Boomfield et. al. (2007); Espen et. al. (2011); and Shaher et.al. (2012) were also examined the effect of 40-m repeated sprint training that does not involved strength training for specificity and speed and agility conditioning methodology on random intermittent dynamic type sports, maximum sprinting speed, repeated sprint speed endurance, vertical jump, aerobic capacity, and physical performance in young elite male soccer players and similar facts were identified that the repeated
sprint programme had a positive effect on several of the parameters tested (i.e., specifically speed and agility). Another reason could be the fact that the experimental group hence underwent a rigorous and regimented fitness regime in a structured set-up in comparison to non-structured set-up used by the control group owing to their remote geographical location with reference to the place of training.

CONCLUSION

The results indicated that there was a significant improvement had exhibited by experimental group cricketers on motor fitness variables after exposed to 12 weeks of repeated seven seconds phosphate recovery drill training in comparison to control group subjects. Hence, it is concluded that repeated seven seconds phosphate recovery drill training programme was an effective training tool to improve a cricketers’ motor fitness abilities.

REFERENCES