Research Paper Physical Education

Effect of Stick Drill Training on Speed Parameters Among Intercollegiate Athletes

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ABSTRACT

The purpose of the study was to find out the effect of stick drill Training on speed parameters among inter collegiate athletes. Twenty four male athletes studying from Department of Physical Education and Centre for Research, H. H. The Rajah's College, Pudukkottai were selected randomly as subjects. The age of the subjects ranged from 17 to 25 years. The selected subjects were divided into two groups. Group I underwent stick drill training and Group II acted as control. The experimental group was subjected to the stick drill training for alternative three days per week up to six weeks. The stick drill training was selected as independent variable and the criterion variables speed parameters like speed, acceleration, stride length and stride frequency were selected as dependent variables and the selected dependent variables were assessed by the standardized test items. Speed was assessed by 50m run and the unit of measurement in seconds, acceleration was assessed by 30m fly and the unit of measurement in seconds and stride length was assessed by 30m run the unit of measurement in centimeters and the stride frequency was assessed by 30m fly and the unit of measurement in seconds. The experimental design selected for this study was pre and post test randomized design. The data were collected from each subject before and after the training period and statistically analyzed by using dependent't' test and analysis of covariance (ANCOVA). It was found that there was a significant improvement and significant different exist due to the effect of running ABC drills associated with speed training on speed parameters among inter collegiate athletes when compared to control group.

KEYWORDS

INTRODUCTION

The "stick Drill" training has to improve the leg turnover, rhythm or stride length. The sticks can provide a model that forces a neuromuscular adaptation by the athletes. If an athlete has a normal stride of seven feet and it may reduce to six and a half feet, by placing the sticks six feet apart. The athlete instructs to place his feet down quicker, so he may get the faster turnover. The coach should instruct him to do the drill frequently and regularly, then only the body will learn quickly without disturbance. (Aaron Thigpen)

The stick drill is very effective in helping sprinters improve their stride frequency and decrease their ground contact time. For do the training the athlete needs several 4 inches x 18 inches (about 10cm x 46 cm) sticks. The athletes place the sticks five feet (about 1.5m) apart for men athletes, and start with four feet (about 1.2m) for women athlete and the distance may reduce for youth. Place the 20 sticks on the ground for a total distance of 30 yard (about 27.4m) for men and 25 yard (about 22.9m) for women. From this position the athlete run over the sticks without touch the sticks, and continue the training two times per week, four to five times per work out. After the two or three weeks the distance between the sticks may be increased about six inches (about 15cm). These drills are very effective techniques for the development of stride length and stride frequency. (Joseph L. Rogers)

The stride length is taken from the flying 30 meter dash. It is the number of strides from 30 meters to 60 meters divided into 30. For example, 8 with right leg + 7with left leg = 15 strides.

30 meters divided by 15 strides = 2.00 meter = 78.75 inches stride length.

Stride Frequency is the number of times a step is taken with a particular leg between 30 meters and 60 meters is ascertained, using two counters (One counter per leg). Add number of steps taken for each leg and divided by flying 30 meter dash time. For example, 8 with right leg + 7 with left leg = 15 strides.

15 strides divided by 5.0 seconds between 30 and 60 meters = 3.00 strides per second. (Joseph L. Rogers)

METHODOLOGY

To achieve the purpose, twenty four men inter collegiate athlete studying from Department of Physical Education and Centre for Research, H. H. The Rajah's College, Pudukkottai were selected randomly as subjects. The age of the subjects ranged from 17 to 25 years. They were assigned randomly into two groups (group I) underwent stick drill training and (group II) acted as control of twelve subjects each. The experimental group was subjected to the training during morning hours for alternative three days for six weeks and group II acted as control. The stick drill training was selected as independent variable and the criterion variables speed, acceleration, stride length and stride frequency were selected as dependent variables and the selected dependent variable were assessed by the standardized test items. speed was assessed by 50m run and the unit of measurement in seconds, acceleration was assessed by 30m fly and the unit of measurement in seconds and stride length was assessed by 30m fly and the unit of measurement in meters and the stride length was assessed by 30m fly and the unit of measure in seconds . The experimental design selected for this study was pre and post test randomized design. The data were collected from each subject before and after the training period and statistically analyzed by using dependent 't' test and analysis of covariance (ANCOVA).

RESULTS AND DISCUSSIONS

The data pertaining to the variables in this study were examined by using dependent 't' test to find out the significant improvement and analysis of covariance (ANCOVA) for each variables separately in order to determine the difference and tested at .05 level of significance. The analysis of dependent 't' test on data obtained for speed, acceleration and speed endurance of the pre test and post test means of experimental and control group have been analyzed and presented in Table I.

TABLE- I
MEAN AND DEPENDENT 't' TEST OF EXPERIMENTAL AND CONTROL GROUPS ON SELECTED VARIABLES

Variables	Mean	Stick Drill Training	Control Group
Speed	Pre test Mean	77.33	7.32
	Post test Mean	7.22	7.34
	't' test	10.38*	1.48
Acceleration	Pre test Mean	4.01	4.01
	Post test Mean	3.92	4.03
	't' test	9.38*	1.483
Stride Length	Pre test Mean	1.85	1.85
	Post test Mean	1.90	1.85
	"t" test	5.60*	1.48
Stride Frequency	Pre test	3.64	3.65
	Post test	3.53	3.66
	't' test	7.00*	1.48

***Significant at 0.05 level of confidence (11) = 2.201**

The obtained 't' ratio value of experimental group is higher than the table value, it is understood that stick drill training had significantly improved the performance of speed, acceleration , stride length and stride frequency. However, the control group has no significant improvement as the obtained 't' value is less than the table value; because it was not subjected to any specific training. The analysis of covariance on the data obtained on speed, acceleration, stride length and stride frequency due to the effect of stick drill training and control groups have been analysed and presented in Table II.

TABLE- II
ANALYSIS OF COVARIANCE OF EXPERIMENTAL AND CONTROL GROUPS ON SELECTED VARIABLES

Variables	Adjusted Post Test Means		Source of Variance	SS	df	Mean Squares	'F'- Ratio
	Stick Drill Training	Control Group					
Speed	7.21	7.35	Between	0.106	1	0.106	72.18*
			Within	0.031	21	0.001	
Acceleration	3.90	4.01	Between	0.137	1	0.137	69.09*
			Within	0.042	21	0.002	
Stride Length	1.90	1.85	Between	0.017	1	0.017	35.70*
			Within	0.010	21	0.000	
Stride Frequency	3.52	3.66	Between	0.107	1	0.107	41.99
			Within	0.053	21	0.003	

***Significant at .05 level of confidence, df (1, 21) = 4.32**

Table II shows that the obtained 'F' ratio value are 72.18, 69.09, 35.70 and 41.99 which are higher than the table value 4.32 with df 1 and 21 required to be significant at 0.05 level. Since the obtained value of 'F' ratio is higher than the table value, it indicates that there is significant difference among the adjusted post- test means of stick drill training and control group on speed, acceleration, stride length and stride frequency.

To the most sports people, stick drill training offered a better method of developing speed, acceleration, stride length and stride frequency. The present study also produced the same result.

CONCLUSIONS

1 The stick drill training had significantly improved the speed, acceleration, stride length and stride frequency.
2 There was significant difference among the adjusted post – test means of stick drill training and control group on speed, acceleration, stride length and stride frequency.

REFERENCES

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