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## Effects of Specific Training and Cross Training on the Development of Skill Performance Variables of the Inter Collegiate Male Hockey Players

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### Abstract

The purpose of the study was to find out the effects of specific training and cross training on the development of Dribble, Hitting and Pushing of the inter-collegiate male hockey players. Forty five inter collegiate hockey players were selected as subjects from Bengaluru region at random to achieve the purpose of the study. Their ages ranged from 18-21 years. (The selected variables of skill performance are also analyzed by using the appropriate statistical tools). The composed data on the criterion measures are treated by dribble and Hitting test and Dribble and Pushing test. The collected data are statistically analyzed by the 't' ratio and one way analysis of variance test and the level of significance for the study is 0.05 level. The results reveal that there is a significant difference in the skill performances of the inter-collegiate male hockey players.

**Keywords:** Cross Training, Specific Training, Dribble, Hitting and Pushing.

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### Introduction

The sport of field hockey or just "hockey," as it's known in most of the 112 countries it is played is widely considered one of the top six sports in the world. A game that started with a simple stick and ball has become one of the most popular sports in the world. Its popularity continues to grow on a global spectrum. Field hockey is a multiple high intensity activity sport with a multidirectional nature. The ability to change direction quickly while maintaining balance without loss of speed is therefore a significant physical component required for effective performance in field hockey. Hockey players need high level of technical skills such as being able to dribble without losing running speed. For a technically good player, dribbling is essentially an automatic process, and the better players distinguish themselves by their running speed while dribbling the ball (Reilly and Bretherton, 1986).

### Objectives of the Study

1. To find out whether the cross training would significantly improve the skill performances of the inter-collegiate male Hockey players.
2. To find out whether the Specific training would significantly improve the skill performances of the inter-collegiate male Hockey players.

### Methodology

The present study was to establish the effects of specific training and cross training on the skill development of the inter-collegiate male hockey players. To attain the purpose of the study 45 male hockey players were chosen and they were randomly allocated in to three equivalent groups. Experimental group 1 (N=15) carry out Cross Training (CTG), experimental group 2 (N=15) carry out Specific Training (STG) and finally control group (N=15) did not undergo any specific training (CG). The experimental groups participated in designated training schedule for the period of 12 weeks, five days in a week. The study variables including dribbling and Hitting and dribbling and Pushing were also analyzed. The data was analyzed by using 't' ratio to find out the mean difference from pre test to post test. Analysis of co variance and Scheffee's post hoc test were applied for the study.

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## Analysis of Data and Interpretation

Table 1

The mean losses / gains between pre and post test values of specific training on dribbling and hitting and dribbling and pushing of the inter collegiate male hockey players

Variables	Test	Mean	Std. Deviation	S.E.M	M.D	't' value
Dribbling and Hitting in Seconds	Pre-Test	9.96	0.35	0.06	0.41	6.70*
	Post- Test	9.55	0.35			
Dribbling and Pushingin Seconds	Pre-Test	10.50	0.66	0.09	0.71	7.38*
	Post- Test	9.78	0.38			

\*Significance at 0.05 levels (2.09)

The table 1 shows the results of 't' value of Dribbling and Hitting (6.70) and Dribbling and Pushing(7.38). The obtained tabulated t value is 2.09 which has statistically significant differences at the 95 % confidential level, D.F. (1,14). It is found that the

results is statistically significant at 0.05 level of confidence. It is observed that the mean gains and losses get from pre and post test show a significant improvement in Dribbling and Hitting (0.41  $p < 0.05$ ), Strength (0.71  $p < 0.05$ ).

Table 2

The mean losses / gains between pre and post test values of cross training on dribbling and hitting and dribbling and pushing of the inter collegiate male hockey players

Variables	Test	Mean	Std. Deviation	S.E.M	M.D	't' value
Dribbling and Hitting in Seconds	Pre-Test	10.02	0.47	0.06	0.80	13.104*
	Post- Test	9.22	0.30			
Dribbling and Pushingin Seconds	Pre-Test	10.43	0.53	0.07	0.96	12.812*
	Post- Test	9.46	0.35			

\*Significance at 0.05 levels (2.09)

The table 2 shows the results of 't' value of Dribbling and Hitting (13.10) and Dribbling and Pushing (12.81). The obtained tabulated t value is 2.09 which has the statistically significant differences at the 95 % confidential level, D.F. (1,14). It is found that the result

is statistically significant at 0.05 level of confidence. It is observed that the mean gains and losses get from pre and post test show a significant improvement in Dribbling and Hitting (0.80  $p < 0.05$ ) and Dribbling and Pushing(0.96  $p < 0.05$ ).

Table 3

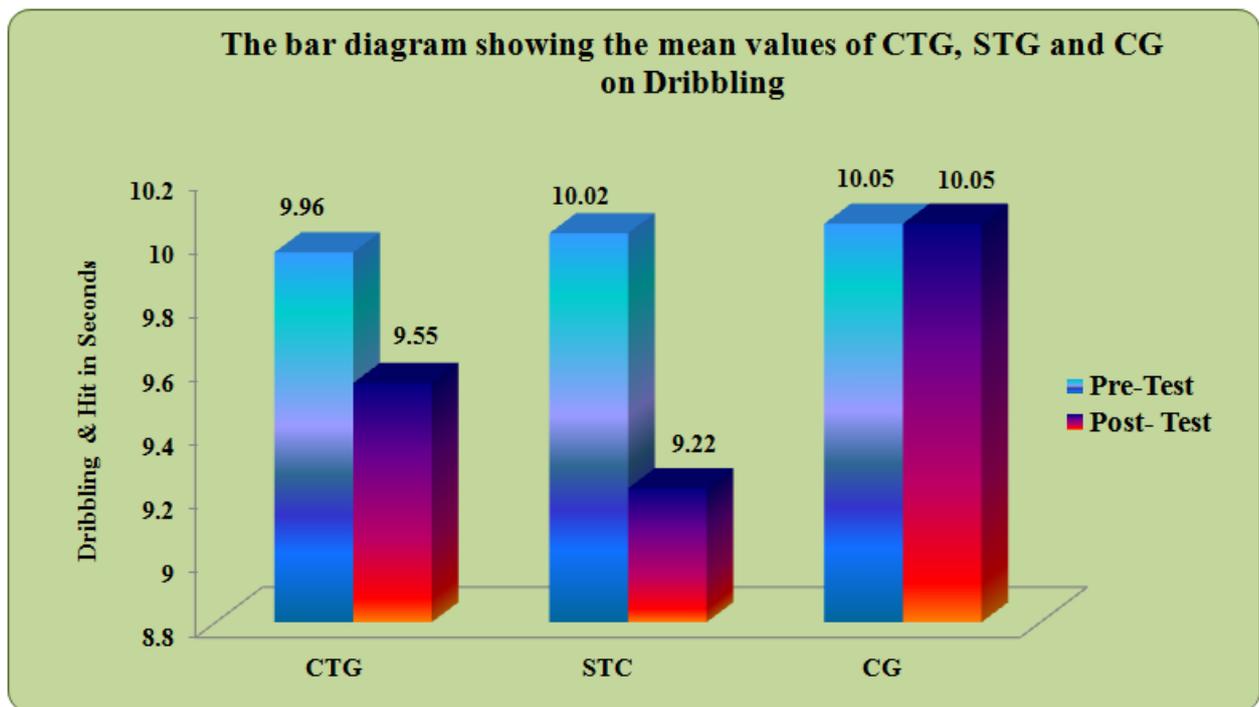
The mean losses / gains between pre and post test values of control group on dribbling and hitting and dribbling and pushing of the inter collegiate male hockey players

Variables	Test	Mean	Std. Deviation	S.E.M	M.D	't' value
Dribbling and Hitting in Seconds	Pre-Test	10.05	0.40	0.006	0.006	1.000
	Post- Test	10.05	0.38			
Dribbling and Pushing in Seconds	Pre-Test	10.48	0.38	0.006	0.006	1.000
	Post- Test	10.48	0.38			

\*Significance at 0.05 levels (2.09)

The Table 3 shows the results of 't' value of Dribbling and Hitting (1.00) and Dribbling and Pushing(1.00). The obtained tabulated t value is 2.09 which has the statistically significant differences at the 95 % confidential level, D.F. (1, 14). It is found that

the result is statistically not significant at 0.05 level of confidence. It is observed that the mean gains and losses get from pre and post test do not show any significant improvement.



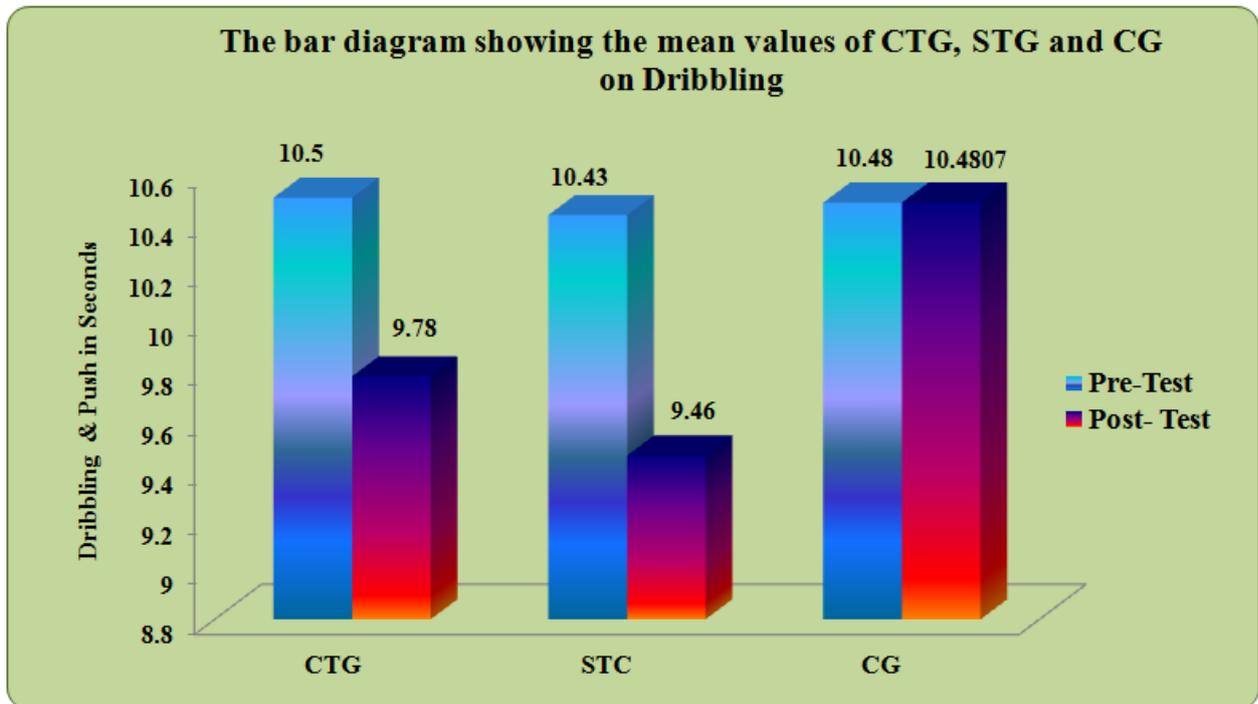


Table 4

Analysis of variance on pre - test means values among CTG, STG and CG on skill performance variables of the inter collegiate male hockey players

Variables	Source of Variance	Sum of Squares	DF	Mean Square	F	Sig.
Dribbling and Hitting in Seconds	Between	0.061	2	0.03	0.179	0.837
	Within	7.124	42	0.17		
Dribbling and Pushing in Seconds	Between	0.031	2	0.016	0.054	0.948
	Within	12.282	42	0.292		

\*Significance at 0.05 levels (3.16)

The table 4 views that the obtained 'F' value for the CTG, STG and CG on Dribbling and Hitting (0.179) and Dribbling and Pushing (0.054). The obtained tabulated f value is 3.16 which is statistically not

significant differences at the 95 % confidential level and the degrees of freedom (2, 42). It is found that the result statistically shows insignificant difference. So the treatment is successful.

Table 5

Analysis of variance on post- test means values among CTG, STG and cg on skill performance of the inter collegiate male hockey players

Variables	Source of Variance	Sum of Squares	DF	Mean Square	F	Sig.
Dribbling and Hitting in Seconds	Between	5.244	2	2.622	21.091	0.00
	Within	5.222	42	0.124		
Dribbling and Pushingin Seconds	Between	8.028	2	4.014	28.010	0.00
	Within	6.019	42	0.143		

\*Significance at 0.05 levels (3.16)

The table 5 views that the obtained ‘F’ value for the CTG, STG and CG on Dribbling and Hitting (21.09), and Dribbling and Pushing(28.01).The obtained tabulated f value is 3.16 which is statistically the

significant differences at the 95 % confidential level and the degrees of freedom (2, 42). It is found that the result statistically shows significant difference. So the treatment is successful.

Table 6

Analysis of covariance on adjusted post -test means values among CTG, STG and CG on skill performance of the inter collegiate male hockey players

Variables	Source of Variance	Sum of Squares	DF	Mean Square	F	Sig.
Dribbling and Hitting in Seconds	Between	4.918	2	2.459	84.884	.000
	Within	1.188	41	0.029		
Dribbling and Pushing in Seconds	Between	7.665	2	3.833	115.376	.000
	Within	1.362	41	0.033		

\*Significance at 0.05 levels (3.16)

The Table 6 views that the obtained ‘F’ value for the CTG, STG and CG on skill performance Variables of Dribbling and Hitting (84.88), and Dribbling and Pushing(115.37).The obtained tabulated ‘f’ value is

3.16 which has statistically the significant differences at the 95 % confidential level and the degrees of freedom (2, 41). It is found that the result statistically shows significant difference.

Table 7

The scheffe's post hoc test for the differences between adjusted post test means of CTG, STG and CG on dribbling and hitting

CTG	STG	CG	Mean Differences	Confidence Interval Value
9.589	9.212	-	0.377	0.18
9.589	-	10.022	0.433	0.18
-	9.212	10.022	0.810	0.18

\* Significant at 0.05 level of confidence

The Table 7 shows the adjusted post hoc test mean values of CTG group, STG group and CG. The mean difference required for the confidential interval is to be significant at 0.18. To Compare the CTG group and STG group, the mean difference between the two groups is 0.377. Hence, STG group shows the better improvement on Dribbling and Hitting. To compare the CTG group and CG, the mean differences between the two groups

were 0.433. Hence CTG group were showed better improvement on Dribbling and Hitting. To comparing STG group and CG, the mean difference between the two groups is 0.810. Hence, STG group shows the better improvement on Dribbling and Hitting. Finally, STG group shows better improvement than the CTG and CG on Dribbling and Hitting.

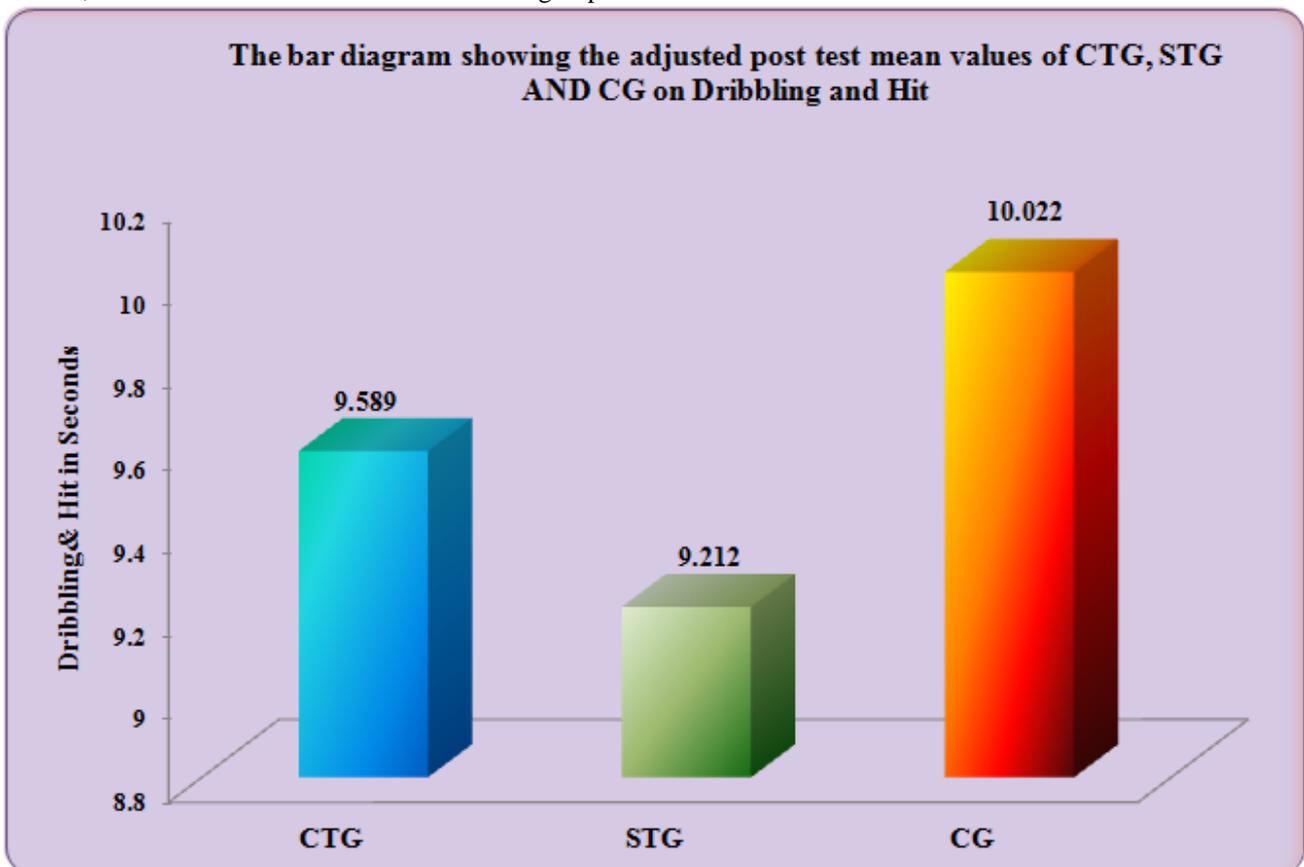


Table 8

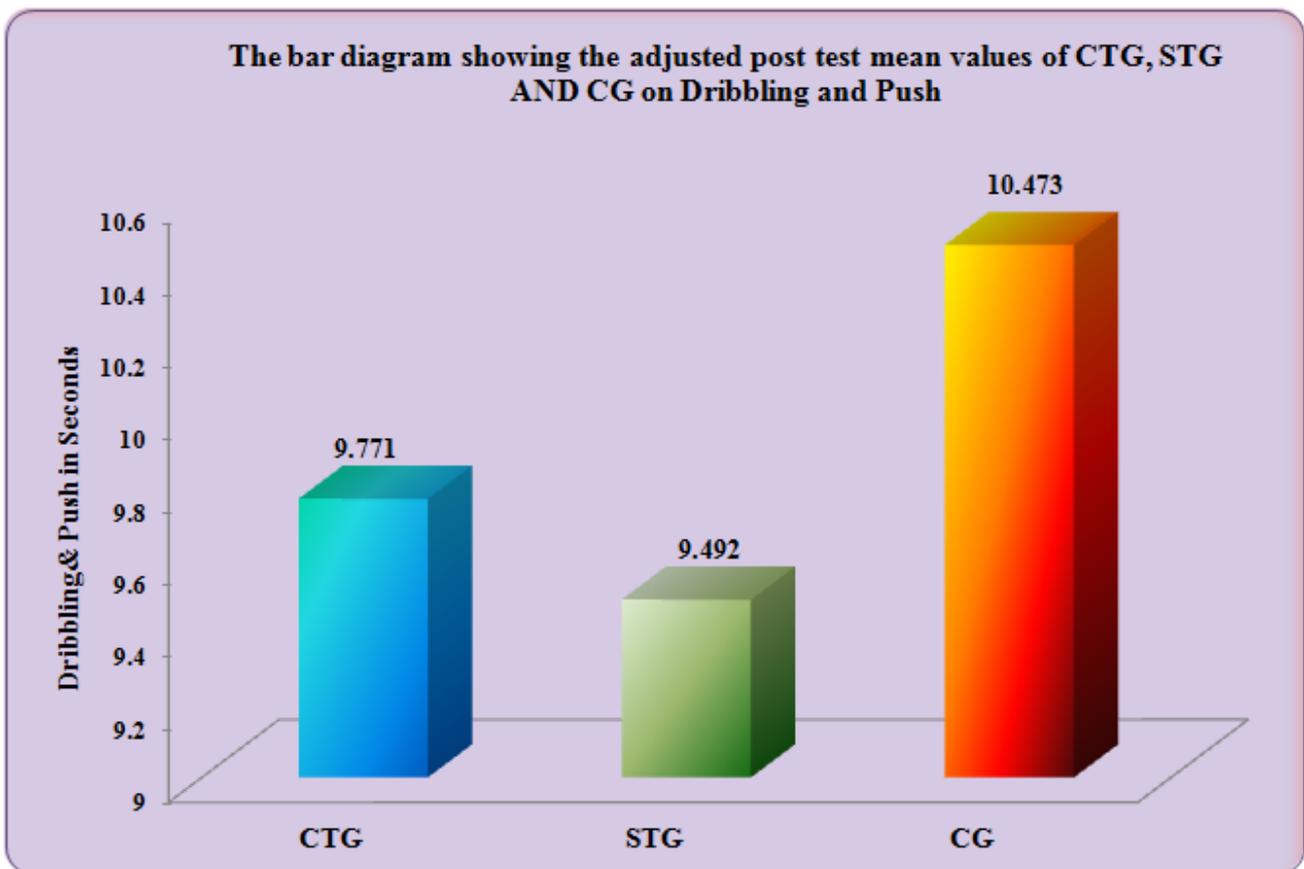
The scheffe's post hoc test for the differences between adjusted post test means of CTG, STG and CG on dribbling and pushing

CTG	STG	CG	Mean Differences	Confidence Interval Value
9.771	9.492	-	0.279	0.19
9.771	-	10.473	0.702	0.19
-	9.492	10.473	0.981	0.19

\* Significant at 0.05 level of confidence

The Table 8 shows the adjusted post hoc test mean values of CTG group, STG group and CG. The mean difference required for the confidential interval is to be significant at 0.19. To Compare the CTG group and STG group, the mean difference between the two groups is 0.279. Hence, STG group shows better improvement on Dribbling and Pushing. To compare the CTG group and CG, the mean differences between the two groups

were 0.702. Hence CTG group were showed better improvement on Dribbling and Pushing. To comparing STG group and CG, the mean difference between the two groups is 0.981. Hence, STG group shows the better improvement on Dribbling and Pushing. Finally, STG group shows better improvement than the CTG and CG on Dribbling and Pushing.



### Result of the Study

1. The present study showed the results that the Specific Training significantly improved Dribbling, Hitting and Pushing among the male inter-collegiate hockey players.
2. The present study showed the results that the Cross Training significantly improved Dribbling, Hitting and Pushing among the male inter-collegiate hockey players.
3. The present study showed the results that the Specific Training significantly improved Dribbling, Hitting and Pushing among the male inter-collegiate hockey players.
4. The present study showed the results that the Cross Training significantly improved Dribbling, Hitting and Pushing among the male inter-collegiate hockey players.

### Conclusion

1. It was established that the Specific Training significantly enhanced Dribbling, Hitting and Pushing among the male inter-collegiate hockey players.
2. It was established that the Cross Training significantly enhanced Dribbling, Hitting and Pushing among the male inter-collegiate hockey players.
3. It was established that the Cross Training significantly enhanced Dribbling, Hitting and Pushing better than the control group among the male inter-collegiate hockey players.
4. It was established that the Specific Training significantly enhanced Dribbling, Hitting and Pushing better than the Cross Training and control group among the male inter-collegiate hockey players.

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