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Strength and Aerobic with Skill Training Effects on Skill Performance of the Collegiate Footballers

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Abstract

To examine the training effects due to the strength and aerobic training with skill training on skill performance of collegiate male footballers. To analyse this purpose, eighty male intercollegiate football players from Karnataka state were selected at (mean (SD) age 20.9± (1.3) years); height 166 cm ± 6 cm; weight 65 ± 3.8 kg. The selected eighty subjects were equally divided into four groups namely Aerobic Training with Skill Training (ATWST), Strength Training with Skill Training (STWST), Combination of Aerobic and Strength Training with Skill Training (CASTWST) and Control Group (CG). The three experimental groups underwent the training programmes for 12 weeks (five sessions a week) as follows: ATWST (n = 20), Aerobic Training With Skill Training; STWST (n = 20), Strength Training With Skill Training; CASTWST (n = 20), Combination of Aerobic and Strength Training with Skill Training and CG (n=20) did not participate in any specific training in different orders during the same training session. All the subjects were evaluated before (T0) and after (T1) the training period using two specific skill tests with the selected variables of dribbling and passing. t test, anova, ancova and scheffee's post-hoc test were applied. The selected variables show significant changes from pre-test to post-test. Combination of Aerobic and Strength Training with Skill Training show better improvement.

Keywords: (ATWST)-Aerobic Training With Skill Training, (STWST) Strength Training With Skill Training, (CASTWST) Combination of Aerobic and Strength Training with Skill Training, Speed and Agility.

Introduction

Variation or strength training is an important concept in designing weight-training programs. The majority of studies examining weight training and they use a traditional strength/power training model of decreasing training volume and increasing training intensity as the program progress. The majority of these studies have used males as subjects, which support the contention; the strength programs have greater changes in motor performance, total body weight, lean body mass, and percent body fat than other programs. However, those studies are needed to examine the reason of strength and aerobic training is more beneficial than other training. Studies are also needed in examining the response of females, children, and seniors to weight-training programs and aerobic models other than the traditional strength/power training model. Football, also known as association football and soccer is according to FIFA played by about 250 million players over 200 countries. This sport is extremely popular among the general population. The most prestigious matches attract crowds of 100,000 or more in some stadiums and many more watching through television. Football is played by two teams consisting of 11 players in each. The two teams compete for the ball and try to score against the opponent's goal in the middle of each short end. With the exception of goalkeepers, the players are not allowed to touch the ball by their hands or arms inside the ground. The field players are allowed to use hands only for throw-in. But when the ball is in the field, they can use their feet to kick the ball and occasionally, use other parts of the body such as the upper parts of legs, torso and the head but not the hands and arms. The team that scores maximum goals wins the match. If the score is tied after 90 minutes of play, it may end with draw or continues with extra time (two times 15 minutes). If the score is still tied after the extra time, a penalty shoot-out determines the winner.

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Methodology

The present study is to evaluate the inter-collegiate Football players level with three different training groups of Aerobic Training With Skill Training (ATWST), Strength Training With Skill Training (STWST), Combination Of Aerobic And Strength Training With Skill Training (CASTWST) over the

period of twelve weeks of training. The study is restricted to 80 male inter college players age ranged from mean (SD) age 20.9± (1.3) years); height 166 cm ± 6 cm; weight 65 ± 3.8 kg. ATWST (n = 20), Aerobic Training With Skill Training; STWST (n = 20), Strength Training With Skill Training; CASTWST (n = 20), Combination Of Aerobic And Strength Training With Skill Training and CG (n=20) did not participate in any specific training in different order during the same training session. All the subjects were evaluated before (T0) and after (T1) the training period using two specific skill tests with the selected variables of dribbling and passing. t test, anova, ancova and scheffee's post-hoc test were applied for before and after the period of 12 weeks.

Result of the Study

Table I. The tabulation values show the mean losses / gains between pre and post-test value of aerobic training with skill training on physical fitness and skill performance variables among the male football players

Variables	Test	Mean	Std. Deviation	S.E.M	M.D	't' value
Passing Ability in Points	Pre-Test	23.95	2.48	0.05	2.05	41.00*
	Post- Test	26.00	2.53			
Dribbling in Seconds	Pre-Test	15.25	1.68	0.08	1.80	21.35*
	Post- Test	13.45	1.49			

0.05 level of significance (2.09)

The obtained t ratio is shown significant improvement from the pre-test to post-test with the table value of 2.09.

Table II. The tabulation values show the mean losses / gains between pre and post-test value of strength training with skill training on physical fitness and skill performance variables among the male football players

Variables	Test	Mean	Std. Deviation	S.E.M	M.D	't' value
Passing Ability in Points	Pre-Test	23.65	3.08	0.35	3.90	10.99
	Post- Test	27.55	2.75			
Dribbling in Seconds	Pre-Test	15.35	1.72	0.09	1.00	10.42
	Post- Test	14.35	1.70			

0.05 level of significance (2.09)

The obtained t ratio is shown significant improvement from the pre-test to post-test with the table value of 2.09.

Table III. The tabulation values show the mean losses / gains between pre and post-test value of combination of aerobic and strength training with skill training on physical fitness and skill performance variables among the male football players

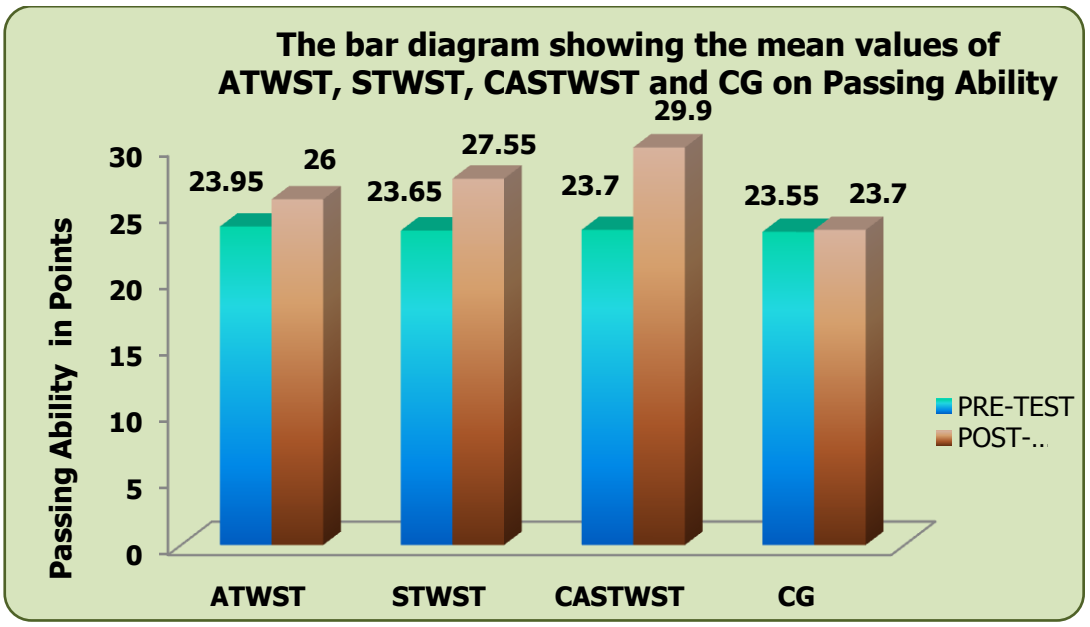
Variables	Test	Mean	Std. Deviation	S.E.M	M.D	't' value
Passing Ability in Points	Pre-Test	23.70	3.32	0.48	6.20	12.79
	Post- Test	29.90	4.02			
Dribbling in Seconds	Pre-Test	15.50	1.87	0.07	2.62	36.76
	Post- Test	12.87	1.99			

0.05 level of significance (2.09)
The obtained t ratio is shown significant improvement from the pre-test to post-test with the table value of 2.09.

Table IV. The tabulation values show the mean losses / gains between pre and post-test value of control group on physical fitness and skill performance variables among the male football players

Variables	Test	Mean	Std. Deviation	S.E.M	M.D	't' value
Passing Ability in Points	Pre-Test	23.55	3.017	0.08	0.15	1.83
	Post- Test	23.70	2.93			
Dribbling in Seconds	Pre-Test	15.40	2.08	0.04	0.07	1.83
	Post- Test	15.32	2.09			

0.05 level of significance (2.09)
The obtained t ratio is shown significant improvement from the pre-test to post-test with the table value of 2.09.



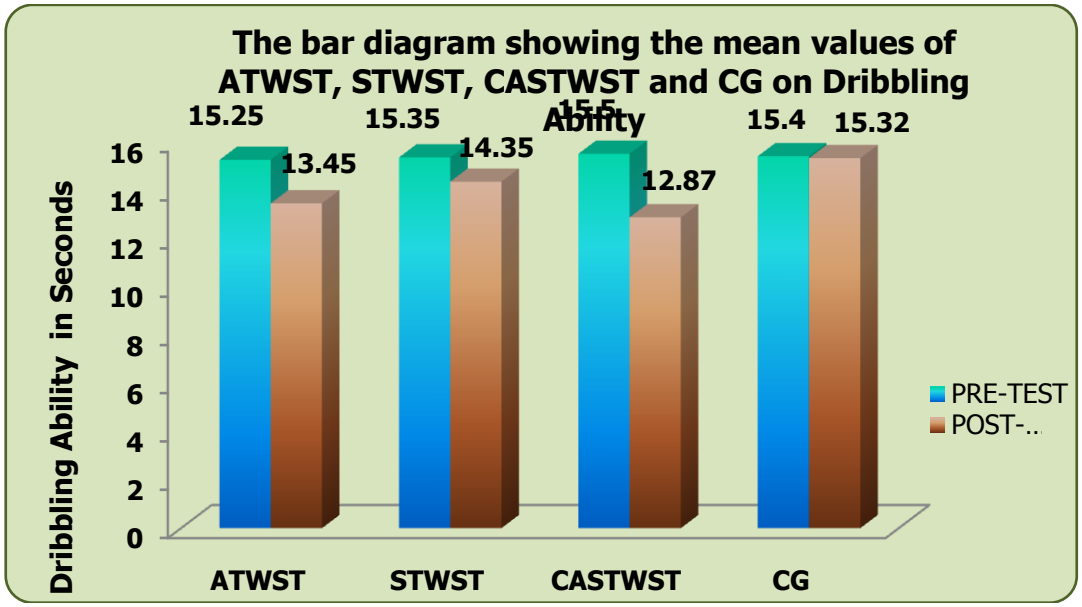


Table V. Analysis of variance on pre-test mean values among the atwst, stwst, castwst and cg on physical fitness and skill performance variables among the male football players

Variables	Source of Variance	Sum of Squares	DF	Mean Square	F	Sig.
Passing Ability in Points	Between	1.73	3	0.57	0.06	0.97
	Within	680.65	76	8.95		
Dribbling in Seconds	Between	0.65	3	0.21	0.06	0.97
	Within	260.10	76	3.42		

0.05 level of significance (2.72)

Table VI. Analysis of variance on post-test mean values among the atwst, stwst, castwst and cg on physical fitness and skill performance variables among the male football players

Variables	Source of Variance	Sum of Squares	DF	Mean Square	F	Sig.
Passing Ability in Points	Between	408.437	3	136.146	14.00*	.000
	Within	738.950	76	9.723		
Dribbling in Seconds	Between	68.925	3	22.975	6.80*	.000
	Within	256.575	76	3.376		

0.05 level of significance (2.72)

Table VII. Analysis of co-variance on pre and post-test mean values among the atwst, stwst, castwst and cg on physical fitness and skill performance variables among the male football players

Variables	Source of Variance	Sum of Squares	DF	Mean Square	F	Sig.
Passing Ability in Points	Between	401.38	3	133.79	72.70*	.000
	Within	138.01	75	1.84		
Dribbling in Seconds	Between	71.39	3	23.79	206.81*	.000
	Within	8.63	75	0.11		

0.05 level of significance (2.72)

Table VIII. The scheffe's post-hoc test for the differences between adjusted post-test means of atwst, stwst, castwst and cg on passing ability

ATWST	STWST	CASTWST	CG	Mean Differences	Confidence Interval Value
25.777	27.609	---	---	1.832	**1.21**
25.777	---	29.912	---	4.135	**1.21**
25.777	---	---	23.853	1.924	**1.21**
	27.609	29.912	---	2.303	**1.21**
---	27.609	---	23.853	3.756	**1.21**
---	---	29.912	23.853	6.059	**1.21**

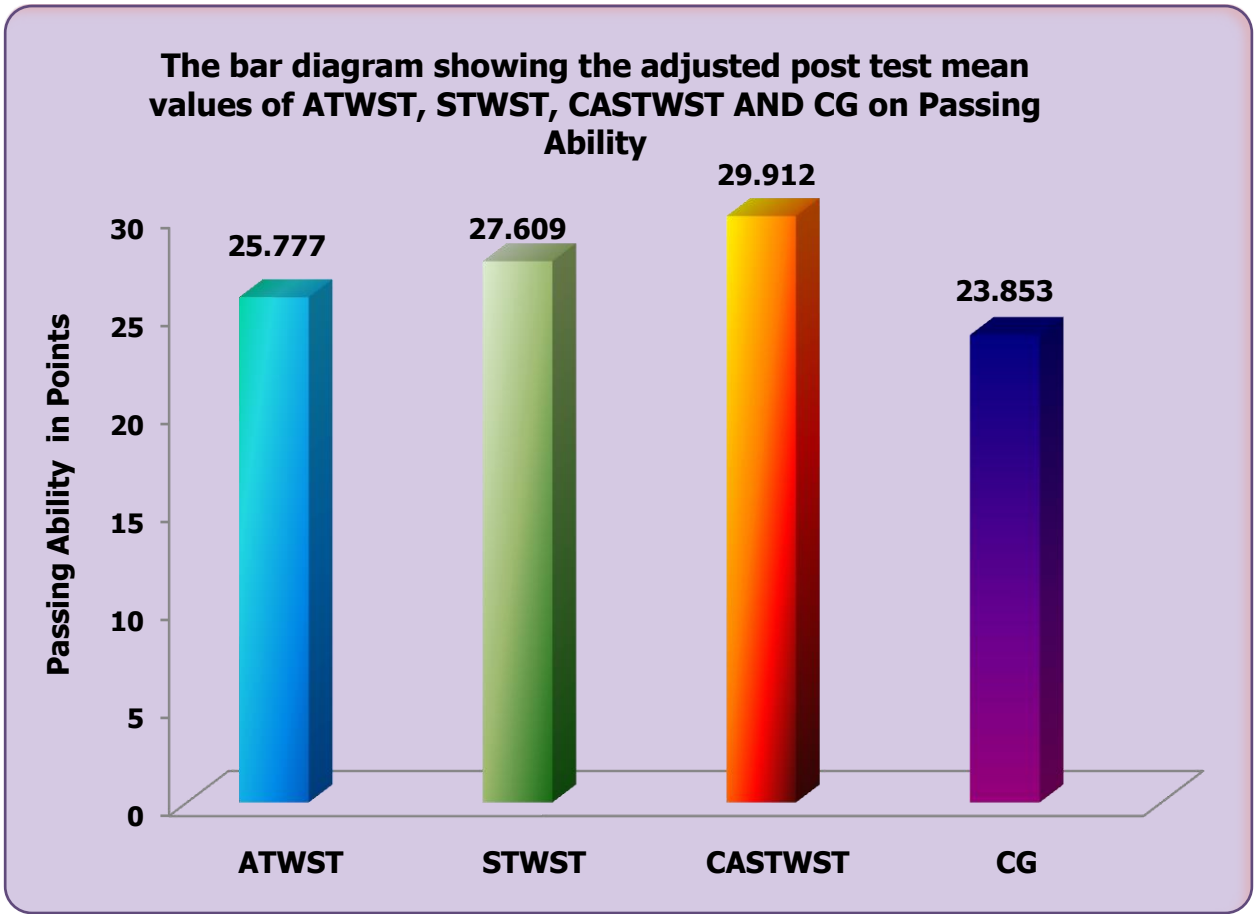
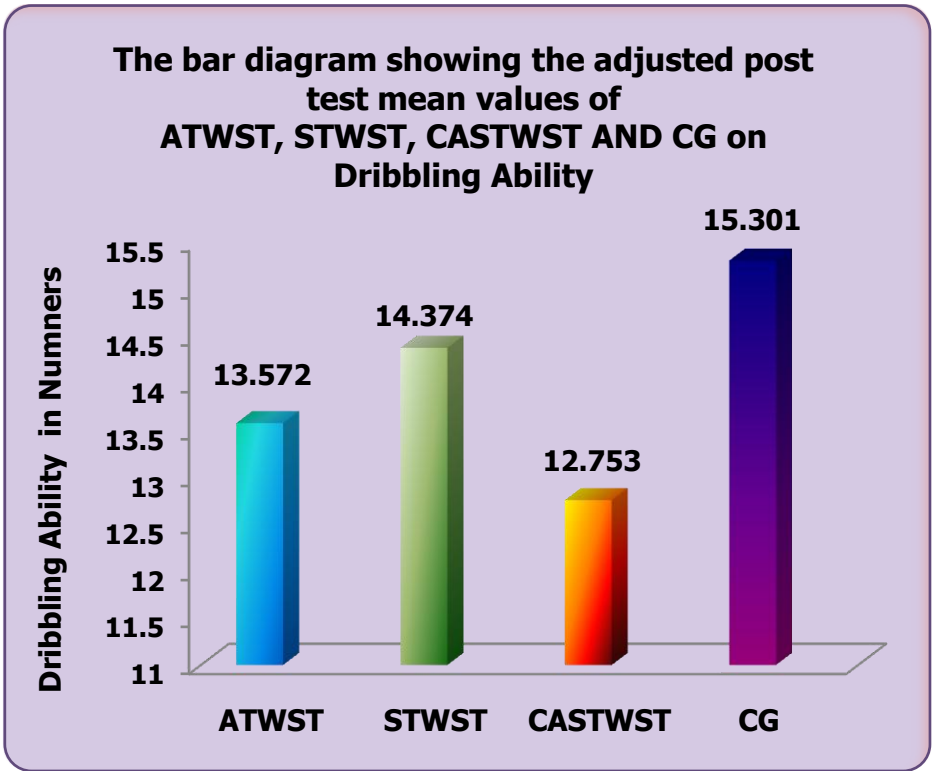


Table IX. The scheffe's post-hoc test for the differences between adjusted post-test means of atwst, stwst, castwst and cg on dribbling ability

ATWST	STWST	CASTWST	CG	Mean Differences	Confidence Interval Value
13.572	14.374	---	---	0.802	**0.302**
13.572	---	12.753	---	0.819	**0.302**
13.572	---	---	15.301	1.729	**0.302**
---	14.374	12.753	---	1.621	**0.302**
---	14.374	---	15.301	0.927	**0.302**
---	---	12.753	15.301	2.548	**0.302**



Discussion on Findings

In analyzing the physical fitness variables for three different training groups of Aerobic Training With Skill Training (ATWST), Strength Training With Skill Training (STWST), and Combination of Aerobic and Strength Training With Skill Training (CASTWST) over the period of twelve weeks of training, the obtained results favor the male Football players who practiced with the Football Specific Resistance Training With Skill Training (RTWST) of dribbling and Passing Ability of the collegiate male football players. The obtained results display similar effect among the other three training modules after the completion of 12 weeks of training period. The results on physical fitness variables and skill performance variables are discussed below.

Passing Ability

The Aerobic Training With Skill Training (ATWST), Strength Training With Skill Training (STWST) and Combination of Aerobic and Strength Training with Skill Training (CASTWST) significantly shows improvement in the Passing Ability from pre-test to post-test. The Passing Ability increased in the ATWST group from pre-test (23.95 + 2.48) to post-test (26.00 + 2.53); STWST group from pre-test (23.65 + 3.08) to post-test (27.55 +2.75), CASTWST group from pre-test (23.70 + 3.32) to post-test (29.90 + 4.02), and there are no changes in control the group from pre-test (23.55 + 3.01) to post-test (23.70 + 2.93). The Passing Ability significantly shows the improvement from pre-test to post-test in the Three Treatment groups and there is no changes in the control group.

The present study demonstrates that an increase in Passing Ability of 8.55 %, 16.49 %, 26.16 % and 0.64 % was estimated with Russal Lange Passing Ability test for Aerobic Training With Skill Training (ATWST), Strength Training With Skill Training (STWST), Combination Of Aerobic And Strength Training With Skill Training (CASTWST) and Control Group (CG) respectively. Combination of aerobic and strength training with skill training (CASTWST) shows improvement in the Passing Ability by 26.16% better than the STWST 16.49 %, ATWST 8.55 %, and the control group 0.64%. Strength Training With Skill Training (STWST) improves the Passing Ability by 16.49% better than the Aerobic Training With Skill Training and Aerobic Training With Skill Training improves the Passing Ability by 8.55% better than the control group.

Dribbling

The Aerobic Training With Skill Training (ATWST), Strength Training With Skill Training (STWST), Combination of Aerobic and Strength Training With Skill Training (CASTWST) significantly shows improvement in the Dribbling from pre-test to post-test. The Dribbling increased in the ATWST group from pre-test (15.25 + 1.68) to post-test (13.45 + 1.49); STWST group from pre-test (15.35 + 1.72) to post-test (14.35 +1.70), CASTWST group from pre-test (15.50 + 1.87) to post-test (12.87 + 1.99), and there are no changes in the control group from pre-test (15.40 +2.08) to post-test (15.32 + 2.09). The Dribbling significantly shows improvement from pre-test to post-test in the

Three Treatment groups and there is no changes in control group.

The present study demonstrates that an increase in Dribbling of 11.80 %, 6.51 %, 16.90 % and 0.45 % was estimated with Warner Soccer test for Aerobic Training With Skill Training (ATWST), Strength Training With Skill Training (STWST), Combination of Aerobic and Strength Training With Skill Training (CASTWST) and Control Group (CG) respectively. Combination of Aerobic and Strength Training With Skill Training (CASTWST) shows improvement in the Dribbling by 16.90% better than the ATWST 11.80 %, STWST 6.51 %, and the control group 0.45%. Aerobic Training with Skill Training (ATWST) improves the Dribbling by 11.80% better than the Strength Training with Skill Training and Strength Training with Skill Training improves the Dribbling by 6.51% better than the Control group.

Conclusion

This study is considered with Aerobic Training With Skill Training shows significant improvement of decreases in Passing Ability and Dribbling of the male football players. The Strength Training With Skill Training shows significant decreases in Passing Ability and Dribbling of the male football players. A Combination of Aerobic and Strength Training with Skill Training shows significant decreases in Passing Ability and Dribbling of the male football players. A Combination of Aerobic and Strength Training With Skill Training shows significant decreases in Passing Ability and Dribbling better the Aerobic Training With Skill Training (ATWST), Strength Training With Skill Training (STWST) and The Control group of the male football players. The Strength training With Skill Training (STWST) shows significant decreases in Passing Ability and Dribbling better than Aerobic Training With Skill Training (ATWST) and the Control group of the male football players. The Aerobic Training with Skill Training (ATWST) shows significant decreases in Passing Ability and Dribbling better than the Control group of the male football players.

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