

# EFFECTS OF COMBINED STRENGTH, AEROBIC WITH SKILL TRAINING ON SPEED AND AGILITY OF THE MALE FOOTBALL PLAYERS

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**Abstract** - Sports are considered as an integral part of the society. The coaches and trainers all over the world are aspiring for better result of their trainers. This can be possible by conducting studies on speed and agility of the male football players. The purpose of the study is to find out a combination of Aerobic and Strength Training with Skill Training on the development of speed and agility of the male football players. The study is designed with 80 male inter college level football players age ranged from 19-25 years. The subjects were selected from inter-collegiate football tournaments in Karnataka state. The data were collected before and after the 12 weeks of the training period. To find the mean difference, *t* test was applied. Analysis of variance and covariance was applied to find the significant changes among the groups. Finally scheffee's post hoc test was analysed to find the pared adjusted post-test means. The level of significant  $p \leq 0.05$  is considered. The result shows that the significant relationship with sprinting speed, agility of the male inter-collegiate football players.

**Key Words:** (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.

## 1.INTRODUCTION

Football is one of the most widely played sports in the world (Inklaar, 1994; Tumilty, 1993). It is characterized by short sprints, rapid acceleration or deceleration, turning, jumping, kicking, and tackling, Bangsbo and Michalsik (2002); Wisloff, Helgerud and Hoff (1998). During the game, players are required to perform the activities like jogging, running (forward, backward and sideways), kicking, turning, heading and throwing. In Sports fitness is very important to everyone on the field. Football is one of those rare games which demands not only speed but also agility, strength, power and endurance. Players in football need not only physical fitness but also technical and tactical skills to succeed in their performances. Fitness is important at all levels of the game, though it is essential for top level players; it is beneficial for beginners who can improve their performances through good standard of fitness. It is generally assumed that through the years, the game develops the players to become faster, with more intensity and aggressive play. Elite football is a complex sport, and the

performance depends on a number of factors, such as physical fitness, psychological factors, player technique and team tactics. Ball skills such as kicking for accuracy, kicking for distance, dribbling with change of direction, dodging with the ball; goal kicking, heading etc. The performance ability of all the skills is depending upon the physical fitness of the players. It is evident from the review of literature that the performance in football is depend on the skills and also depend on the physical fitness and abilities of the players. It is further understood from the literature review that the experts differ in their opinions about the impact of physical fitness on the performance of football players and no clear evidence is available in the literature about the impact of ball skill on the performance of players at college level football game. The year and as such they might not have developed the physical fitness parameters to optimum level and their ball skills also may not be to the level of elite footballers of professional clubs or national and international level players. No scientific research has also been conducted to find out the relation between physical fitness parameters and performance in football skills at college level football teams in India, Reported in Literature. Hence, it is felt necessary to carry out a study to find out the relationship among the selected football skills and physical fitness component of inter- collegiate level male football players.

## 2.MATERIAL AND METHODS

A Study was conducted on inter-collegiate level football players from Karnataka state. Sports are considered as an integral part of society. The coaches and trainers all over the world are aspiring for better result of their trainers. This can be possible by conducting studies on the relationship of the selected variables. The purpose of the study is to find out a combination of Aerobic and Strength Training with Skill Training on the development of physical fitness variables of the male football players. The study is delimited to 80 male inter college level players age ranged from 19-25 years. The three experimental groups underwent with 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 the any specific training. The selected Physical Fitness test was constructed by observing all the procedures. Speed was measured by 50 yards dash and agility was measured by

Illinois agility test. The data collected was analyzed statistically to confirm the performance in physical fitness tests. To find the mean difference t test was applied and analysis of variance and covariance was applied to find the significant changes among the groups. Finally scheffee's post- hoc test was utilized to find the pared adjusted post-test means. The level of  $p \leq 0.05$  is considered significant. The result shows significant relationship with sprinting speed, agility of male inter-collegiate football players.

**Table-2.1**

**THE TABULATION VALUES SHOW THE MEAN LOSSES / GAINS BETWEEN PRE AND POST-TEST VALUE OF AEROBIC TRAINING WITH SKILL TRAINING ON AGILITY AND SPEED OF THE MALE FOOTBALL PLAYERS**

Variables	Test	Mean	Std. Deviation	S.E. M	M.D	't' value
Agility in Seconds	Pre-Test	18.05	1.05	0.09	1.02	11.10*
	Post-Test	17.02	1.10			
Speed in seconds	Pre-Test	8.37	0.80	0.03	0.31	8.39*
	Post- Test	8.06	0.80			

**0.05 level of significance ( 2.09)**

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

**Table 2.2**

**THE TABULATION VALUES SHOW THE MEAN LOSSES / GAINS BETWEEN PRE AND POST-TEST VALUE OF STRENGTH TRAINING WITH SKILL TRAINING ON AGILITY AND SPEED OF MALE THE FOOTBALL PLAYERS**

Variables	Test	Mean	Std. Deviation	S.E. M	M.D	't' value
Agility in Seconds	Pre-Test	17.97	1.00	0.12	0.57	4.7
	Post- Test	17.40	1.09			
Speed in seconds	Pre-Test	8.32	0.76	0.06	0.72	10.72
	Post- Test	7.60	0.69			

**0.05 level of significance ( 2.09)**

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

**Table 2.3**

**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 AGILITY AND SPEED OF THE MALE FOOTBALL PLAYERS**

Variable s	Test	Mean	Std. Deviation	S.E.M	M.D	't' value
Agility in Seconds	Pre-Test	17.95	1.06	0.15	1.72	11.06
	Post-Test	16.22	1.03			
Speed in seconds	Pre-Test	8.41	0.69	0.19	1.06	5.54
	Post-Test	7.35	0.81			

**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.

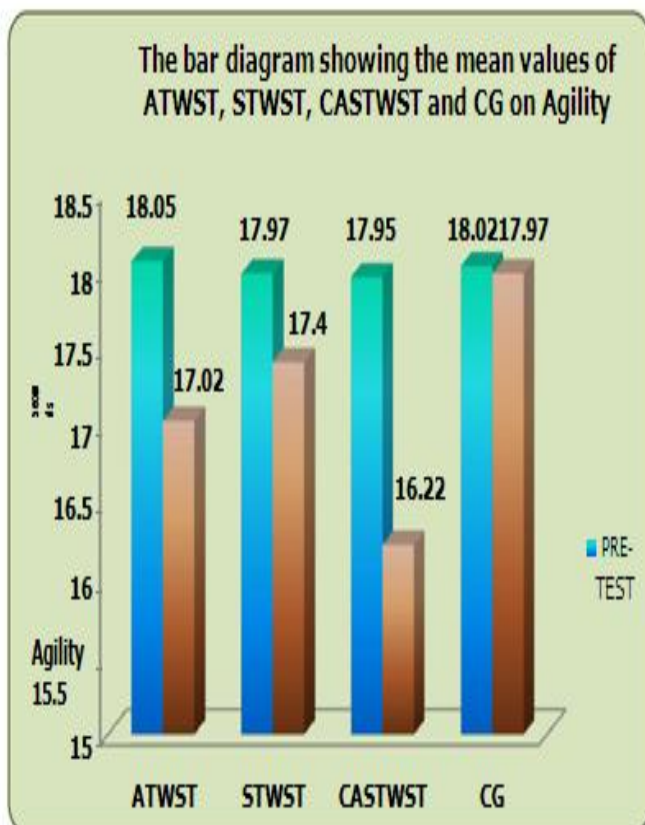
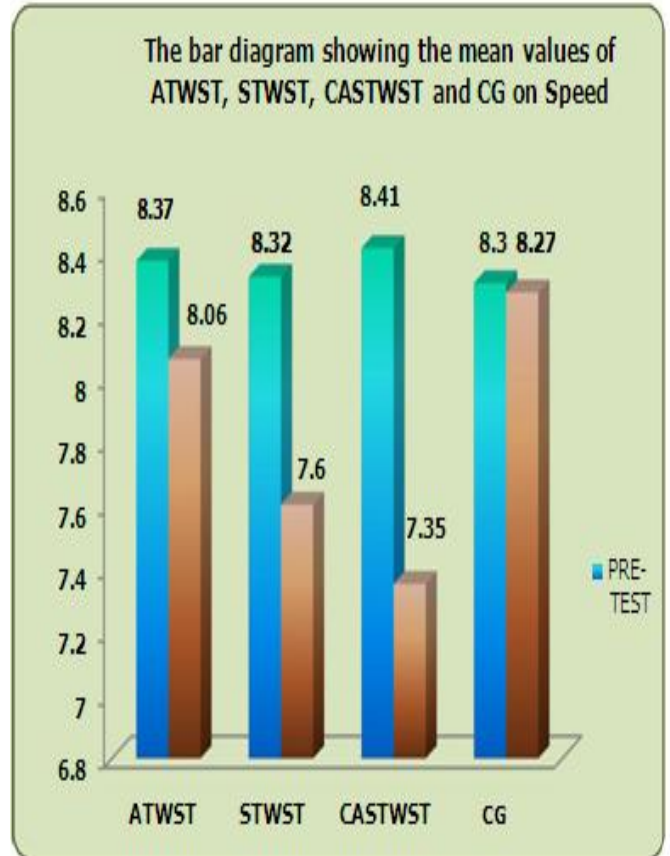
TABLE 2.4

THE TABULATION VALUES SHOW THE MEAN LOSSES / GAINS BETWEEN PRE AND POST-TEST VALUE OF CONTROL GROUP ON AGILITY AND SPEED OF THE MALE FOOTBALL PLAYERS

Variables	Test	Mean	Std. Deviation	S.E.M	M.D	't' value
Agility in Seconds	Pre-Test	18.02	0.95	.03	.05	1.45
	Post-Test	17.97	0.96			
Speed in seconds	Pre-Test	8.30	0.84	.016	.03	1.83
	Post-Test	8.27	0.83			

0.05 level of significance ( 2.09)

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



**Table-2.5**

**ANALYSIS OF VARIANCE ON PRE-TEST MEAN VALUES AMONG THE ATWST, STWST, CASTWST AND CG ON AGILITY AND SPEED OF THE MALE FOOTBALL PLAYERS**

Variables	Source of Variance	Sum of Squares	DF	Mean Square	F	Sig.
Agility in Seconds	Between	0.12	3	0.04	0.04	0.98
	Within	78.87	76	1.03		
Speed in seconds	Between	0.15	3	0.05	0.08	0.96
	Within	46.52	76	0.61		

**0.05 level of significance ( 2.72)**

Table-2.6

**ANALYSIS OF VARIANCE ON POST-TEST MEAN VALUES AMONG THE ATWST, STWST, CASTWST AND CG ON AGILITY AND SPEED OF THE MALE FOOTBALL PLAYERS**

Variables	Source of Variance	Sum of Squares	DF	Mean Square	F	Sig.
Agility in Seconds	Between	32.284	3	10.761	9.73*	.000
	Within	84.012	76	1.105		
Speed in seconds	Between	10.636	3	3.545	5.68*	.001
	Within	47.418	76	.624		

0.05 level of significance ( 2.72)

**Table-2.7**

**ANALYSIS OF CO-VARIANCE ON PRE AND POST-TEST MEAN VALUES AMONG THE ATWST, STWST, CASTWST AND CG ON AGILITY AND SPEED OF THE MALE FOOTBALL PLAYERS**

Variables	Source of Variance	Sum of Squares	DF	Mean Square	F	Sig.
Agility in Seconds	Between	30.38	3	10.12	42.22*	.000
	Within	17.99	75	0.24		
Speed in seconds	Between	12.10	3	4.03	20.07*	.000
	Within	15.07	75	0.20		

**0.05 level of significance ( 2.72)**

Table-2.8

THE SCHEFFE'S POST HOC TEST FOR THE DIFFERENCES BETWEEN ADJUSTED POST-TEST MEANS OF ATWST, STWST, CASTWST AND CG ON AGILITY

ATWST	STWST	CASTWST	CG	Mean Difference	Confidence Interval Value
16.979	17.423	---	---	0.444	0.436
16.979	---	16.271	---	0.708	0.436
16.979	---	---	17.952	0.973	0.436
---	17.423	16.271	---	1.152	0.436
---	17.423	---	17.952	0.529	0.436
---	---	16.271	17.952	1.681	0.436

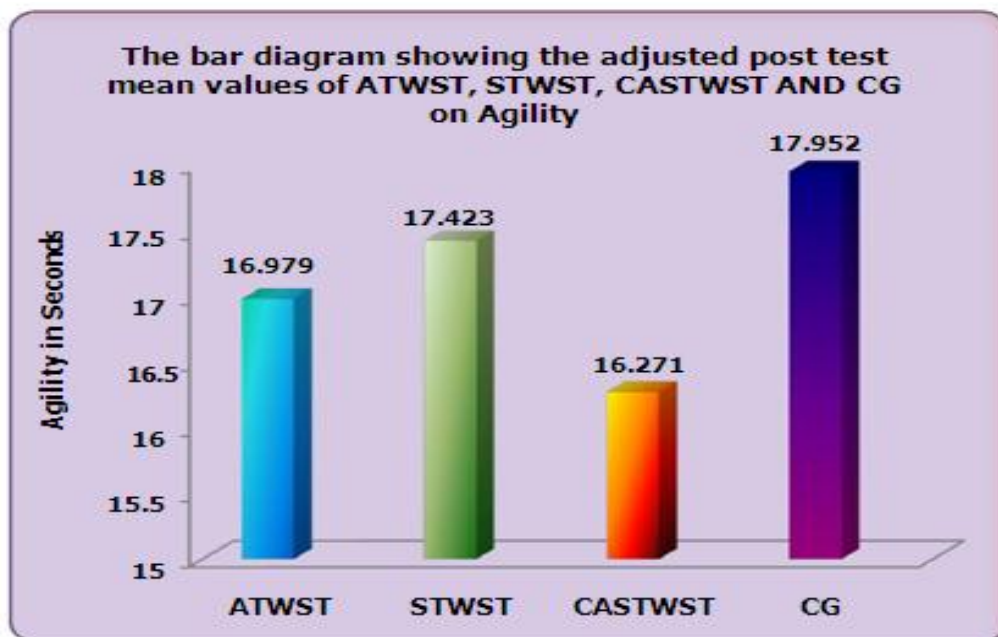
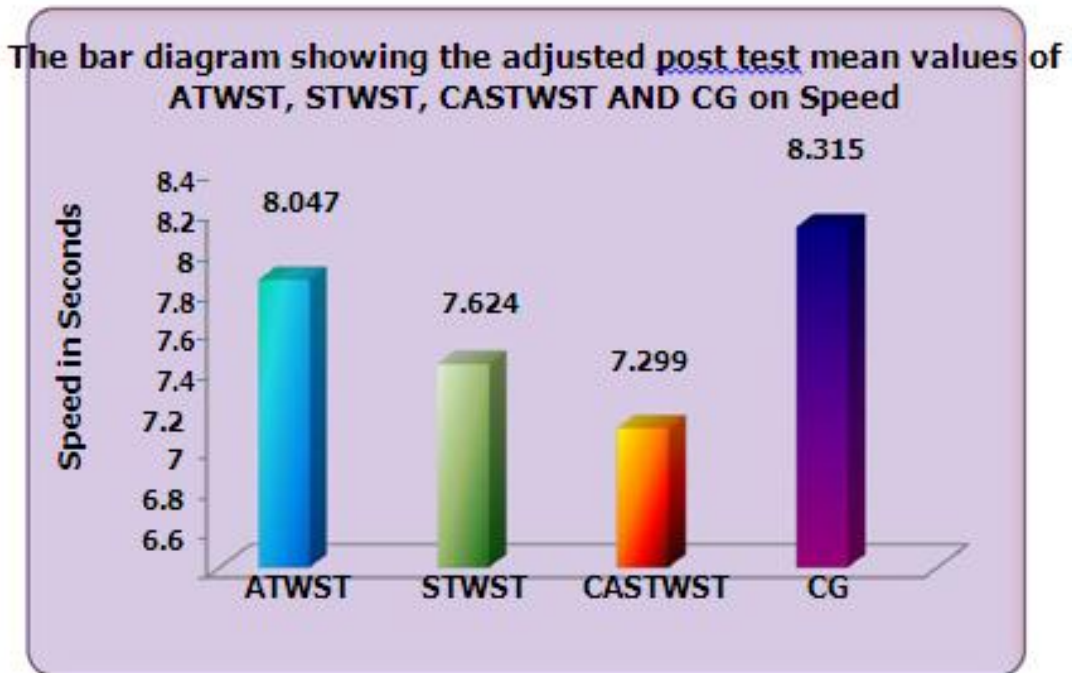


Table-2.9

THE SCHEFFE'S POST HOC TEST FOR THE DIFFERENCES BETWEEN ADJUSTED POST-TEST MEANS OF ATWST, STWST, CASTWST AND CG ON SPEED

ATWST	STWST	CASTWST	CG	Mean Differences	Confidence Interval
8.047	7.624	---	---	0.423*	0.399
8.047	---	7.299	---	0.748*	0.399
8.047	---	---	8.315	0.268	0.399
---	7.624	7.299	---	0.325	0.399
---	7.624	---	8.315	0.691*	0.399
---	---	7.299	8.315	1.016*	0.399





### 3. DISCUSSION ON FINDINGS

In analyzing the physical fitness variables of agility and speed for 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 the training, the obtained results favor the male football players who practiced with the Aerobic Training With Skill Training (ATWST) of agility and speed. The obtained results display similar effect among the other three training modules after the completion of 12 weeks of the training period. The results of agility and speed are discussed below.

#### 3.1. Agility

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 show the improvement the Agility from pre-test to post-test. The Agility increased in the ATWST group from pre-test (18.05 + 1.05) to post-test (17.02 + 1.10); STWST group from pre-test (17.97 + 1.00) to post-test (17.40 + 1.09), CASTWST group from pre-test (17.95 + 1.06) to post-test (16.22 + 1.03), and there are no changes in the control group from pre-test (18.02 + 0.95) to post-test (17.97 + 0.96). The Agility significantly shows improvement from pre-test to post-test in the Three Treatment groups and there is no change in the control group.

The present study demonstrates that an increase in Agility of 5.65 %, 3.17 %, 9.58 % and 0.27% was estimated with Illinois agility 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 the improvement the Agility by 9.58% better than the ATWST 5.65 %, STWST 3.17 %, and control group 0.27%. Aerobic Training with Skill Training (ATWST) improves the Agility by 5.65% better than the Strength Training With Skill Training and Strength Training With Skill Training improve the Agility by 3.17% better than the Control Group.

#### 3.2. Speed

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 show improvement in the Speed from pre-test to post test. The Speed increased in the ATWST group from pre-test (8.37 + 0.80) to post-test (8.06 + 0.80); STWST group from pre-test (8.32 + 0.76) to post-test (7.60 + 0.69), CASTWST group from pre-test (8.41 + 0.69) to post-test (7.35 + 0.81), and there are no change in control

group from pre-test (8.30 + 0.84) to post-test (8.27 + 0.83). The Speed significantly shows improvement from pre-test to post-test in the Three Treatment groups and there is no change in the control group.

The present study demonstrates that an increase in Speed of 3.70 %, 8.65 %, 12.60 % and 0.36% was estimated with 50mtr Running 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 Speed by 12.60% better than the STWST 8.65 %, ATWST 3.70 %, and Control Group 0.36%. Strength Training With Skill Training (STWST) improves the Speed by 8.65% better than the Aerobic Training With Skill Training And Aerobic Training With Skill Training improves the Speed by 3.70% better than the control group.

### 4. CONCLUSION

This Study is conducted with Aerobic Training with Skill Training shows significant improvement of decreases in the speed and agility of male the football players.

The Strength Training With Skill Training shows significant decreases in the Speed and Agility of the male football players

The Combination of Aerobic and Strength Training with Skill Training shows significant decreases in the speed and agility of the male football players.

The Combination of Aerobic and Strength Training with Skill Training shows significant decreases in the speed and agility better than Aerobic Training with Skill Training (ATWST), Strength Training with Skill

Training (STWST) The Control Group of the male football players.

The Strength Training With Skill Training (STWST) shows significant decreases in the speed and agility 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 the speed and agility better than the Control Group of the male football players.

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