EFFECT OF SPECIFIC SKILL TRAINING WITH AND WITHOUT RESISTANCE TRAINING ON SKILL PERFORMANCE OF COLLEGE SOCCER PLAYERS

M. Muhammed Shafeeq**,** *Research Scholar, Department of Physical Education, Annamalai University*
Dr. N. Akilan*, Research Guide, Assistant Professor, Department of Physical Education, Annamalai University*

ABSTRACT

The purpose of this study was to find out the effects of specific skill training with and without resistance training on skill preformance college soccer players. To attain these objectives, 45 college men soccer players in the age of 18-25 years were preferred. The chosen subjects (N=45) were classified into three equivalent groups of fifteen participants each (n=15) at random. Group-I was assigned resistance training, group-II was assigned resistance training in combination with soccer specific skill training and group-III was control. They did these 2 trainings for 12 weeks. All 3 groups were measured before and immediately after 12weeks of training period on skill preformance by using standardized test items. The data obtained were analyzed by paired 't' test to know the differences if any between the two testing periods. Additionally, magnitude of variation was also calculated. In addition, ANCOVA was also applied. When the adjusted 'F' was greater, Scheffe's test was applied. Performing specific skill training leads to 6.70% of improvement in shooting skill whereas performing resistance training with specific skill training leads to 13.16% of improvement in shooting ability.

Key words**:** *Specific skill training, Resistance training, Shooting ability and Soccer players*

INTRODUCTION

Soccer is a sport that requires a combination of technical skill, tactical awareness, and physical fitness, including strength, speed, endurance, and agility (Stolen et al., 2005). While physical conditioning enhances players' overall performance and reduces injury risk, technical skill training is essential for executing game-specific actions such as passing, dribbling, and shooting (Williams & Reilly, 2000). Previous research has shown that integrating resistance training with skill practice can improve both physical and skill-related performance; however, the extent of its combined effects on collegiate soccer players remains underexplored.

Soccer performance depends not only on physical attributes but also on technical proficiency. Studying the effects of skill training with and without resistance training helps identify training methods that maximize both physical and skill-related outcomes (Chelly et al., 2010). Collegiate soccer players often have limited training time. Understanding how resistance training complements skill training can guide coaches in designing effective,

time-efficient programs that improve endurance, strength, and technical skills simultaneously (Hoff & Helgerud, 2004).

While separate studies have examined resistance training or skill training alone, few have investigated the combined impact of resistance and soccer-specific skill training on physical, physiological, and skill-related variables among college-level athletes. This study aims to fill that gap and provide empirical evidence for integrated training approaches (Rampinini et al., 2007).

Effective skill performance is intertwined with physical fitness. Strength, agility, speed, and endurance support the execution of technical skills under match conditions. For example, sprinting ability enhances dribbling success, while core stability contributes to balance during shooting or tackling (Chelly et al., 2010). Skill performance in soccer encompasses technical proficiency, tactical awareness, decision-making, and the ability to execute under pressure. Developing these skills through structured, soccer-specific drills, position-specific training, and skill practice under fatigue is essential for optimizing match performance and overall player development. Integrating physical conditioning with skill training ensures sustained high-level performance throughout the demands of a soccer match.

College players often compete in tournaments that demand high-intensity intermittent performance. The findings of this study can inform training strategies that improve strength, speed, endurance, skill accuracy, and decision-making, thus enhancing competitive performance and reducing injury risk (Ford et al., 2010). In summary, this study was selected to evaluate the combined effects of soccer-specific skill training and resistance training on essential performance variables, providing both scientific insights and practical guidelines for enhancing collegiate soccer players' physical and technical capabilities.

METHODOLOGY

Subjects and Variables

To attain these objectives, 45 college men soccer players from Centre for Physical Education, University of Calicut, Kerala in the age of 18-25 years were preferred. The chosen subjects (N=45) were classified into three equivalent groups of fifteen participants each (n=15) at random. Group-I was assigned specific skill training, group-II was assigned resistance training in combination with specific skill training and group-III was control. All

3 groups were assessed before and immediately after 12 weeks of training period on shooting ability by using Mor-Christian General Soccer Ability Skill Test battery.

Training Protocol

The specific skill training and resistance training in combination with specific skill training group subjects took part in a 12-week training program performing a variety of exercises designed. Group-I was assigned specific skill training, group-II was assigned resistance training in combination with specific skill training. The resistance training program was a total body workout consisting of 3 sets of 7-10 repetitions on 6 exercises that trained all the major muscle groups. A percentage of each subject's one-repetition maximum for each exercise was used to determine the intensity of each week. The intensity and number of repetitions performed for each exercise was progressively increased.

The subjects of the experimental group performed soccer game related specific skills and drills practices, three alternative days in a week for 12 weeks during the morning session. They performed the following exercises namely inside foot kick, instep foot kick, close control dribbling, speed control dribbling, jump heading, dive heading, sole trap, thigh trap, chest trap, block tackle, poke tackle and slide tackle respectively. The training intensity was gradually increased as training progressed throughout the training period. The rest - work ratio of 1:1 in-between repetitions and 1:3 between sets was given.

Collection of the Data

The data on skill performance was collected prior to the commencement of experiment (pre test) and after twelve weeks of training period (post test). Both the pre and post tests were administered under identical conditions, with same apparatus, testing personal and testing procedures.

Statistical Technique

The data collected from the experimental and control groups on skill performance was statistically analyzed by paired 't' test to find out the significant differences if any between the pre and post test. Further, percentage of changes was calculated to find out the chances in shooting ability due to the impact of experimental treatment. Further, the data collected from the three groups prior to and post experimentation on shooting ability was statistically analyzed to find out the significant difference if any, by applying the analysis of covariance (ANCOVA). Since, three groups were involved, whenever the obtained 'F' ratio

value in the adjusted post test mean was found to be significant, the Scheffe's test was applied as post hoc test to determine the paired mean differences, if any. The level of confidence is fixed at 0.05 for significance.

RESULT

The collected pre and post test shooting ability (SA) data of specific skill training and resistance training with specific skill training & control groups are analyzed statistically as in Table - I.

Table – I: Paired't' Test Results and % of Improvement on Shooting Ability (SA) for Specific Skill Training and Resistance Training with Specific Skill Training and Control Group's

(*Unit*: *Points*)

Group	Test	N	Mean	SD	DM	Std. Error Mean	't' - ratio	%
Specific Skill Training	Pre	15	58.6667	5.77763	3.9333	1.49178	3.818*	6.70%
	Post		62.6000	4.92515		1.27167		
Resistance Training with Specific Skill Training	Pre	15	57.7333	6.46382	7.6000	1.66895	8.128*	13.16%
	Post		65.3333	3.59894		.92924		
Control	Pre	15	57.7333	8.17196	0.8000	2.10999	1.065	1.39%
	Post		56.9333	8.13692		2.10094		

*Table value for df 14 is 2.15(*significant)*

The collected pre and post test shooting ability (SA) values of two treatment (specific skill training and resistance training with specific skill training) groups vary obviously as the found 't' values of specific skill training (3.818) as well as resistance training with specific skill training (8.128) groups were more than table value (df14=2.15).

Performing specific skill training leads to 6.70% of improvement in shooting skill whereas performing resistance training with specific skill training leads to 13.16% of improvement in shooting ability.

The chosen soccer player's shooting ability of specific skill training and resistance training with specific skill training & Control groups were analyzed by ANCOVA statistics, and exhibited in Table – II.

Table – II: ANCOVA Results on Shooting Ability (SA) of Specific Skill Training and Resistance Training with Specific Skill Training and Control group's

	Specific Skill Training	Resistance Training with Specific Skill Training	Control	SoV	SS	df	MS	'F' ratio
Adjusted Mean	62.144	65.561	57.161	B	535.308	2	267.654	28.694*
				W	382.438	41	9.328	

*(Table value for df 2 & 41 is 3.23)*Significant (.05 level)*

The applied ANCOVA calculation established that the adjusted (post test) means (specific skill training group=62.144, resistance training with specific skill training group = 65.561 & CG=57.161) of soccer player's shooting ability of all three chosen groups differs from each other, because the resultant adjusted (post test) mean 'F' value (28.694) is better than 3.23 (Table value for *df 2 & 41* =3.23).

As the specific skill training and resistance training with specific skill training & Control group's adjusted (post test) means 'F' value (F= 28.694) is significant, Scheffe's statistics was also used as in Table - III.

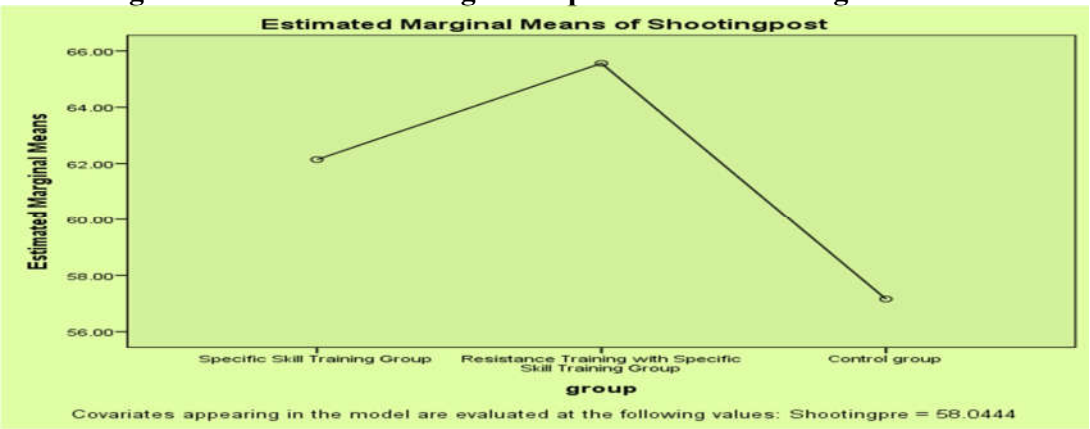
Table – III: Scheffe's Test Conclusion on Shooting Ability (SA) for Specific Skill Training and Resistance Training with Specific Skill Training and Control Group's

Variable	Specific Skill Training	Resistance with Specific Skill Training	Control	MD	CI
Shooting	62.144	65.561		3.417*	2.835
	62.144		57.161	4.983*	2.835
		65.561	57.161	8.400*	2.835

**Significant (.05)*

The applied Scheffe's statistics confirmed that due to specific skill training (4.983), as well as resistance training with specific skill training (8.400) the soccer player's shooting (S) was improved to a great extent. Though, resistance training with specific skill training was much better than specific skill training alone since the mean difference (3.417) is more than 2.835 (CI value).

Figure- I: Estimated Marginal Means on Shooting Ability (SA) of Specific Skill Training and Resistance Training with Specific Skill Training and Control Groups



DISCUSSION

Shooting is a critical skill in soccer that determines goal-scoring potential and overall offensive effectiveness. Effective shooting requires lower-limb strength, power, coordination, balance, and accuracy, as well as timing and technique (Katis & Kellis, 2009). Improvements in shooting ability enhance a player's ability to convert goal opportunities and contribute decisively to team performance.

Resistance training enhances the physical foundations necessary for powerful and accurate shooting: Strong quadriceps, hamstrings, glutes, and calf muscles allow more forceful ball striking, increasing shot velocity. Strong core muscles stabilize the body during shooting, allowing precise transfer of force from the lower limbs to the ball. Improved motor unit recruitment and firing rates facilitate rapid, coordinated leg movements essential for accurate shooting (Chelly et al., 2010). Enhance stretch-shortening cycle efficiency, contributing to dynamic leg extension during shooting.

Specific skill training focuses on shooting technique under realistic game conditions: Repetitive shooting drills improve accuracy, ball control, and foot placement. Small-sided games provide opportunities to shoot under pressure and in dynamic situations, improving decision-making. Integration with movement patterns ensures players can execute powerful and accurate shots while sprinting, changing direction, or evading defenders (Williams & Hodges, 2005).

Chelly et al. (2010) found that combined resistance and plyometric training improved not only sprinting and jumping but also kicking and shooting performance in

young soccer players. Rønnestad et al. (2008) reported that professional players improved leg coordination and ball-striking ability when resistance training was integrated with technical skill drills. Williams & Hodges (2005) emphasized that concurrent development of physical capacity and technical skill accelerates skill acquisition and optimizes performance transfer. Katis & Kellis (2009) highlighted that stronger and more stable lower limbs directly improve shot velocity and accuracy.

Resistance training enhances rapid, coordinated muscle activation for shooting. Supports body positioning and force transfer during dynamic shooting actions.Increases ball velocity while maintaining control. Practicing shooting with strength gains ensures effective execution in match conditions. Coaches should integrate lower-limb and core resistance exercises with shooting drills to maximize improvements. Youth programs can simultaneously develop strength, power, and technical proficiency. Elite players can achieve higher shot velocity, accuracy, and consistency, providing a competitive advantage during matches.

CONCLUSION

Performing specific skill training leads to 6.70% of improvement in shooting skill whereas performing resistance training with specific skill training leads to 13.16% of improvement in shooting ability. Resistance training combined with specific skill training leads to superior improvements in shooting ability compared to either method alone. Resistance training provides the strength, power, and stability required for effective shots, while skill training ensures precise application and transfer to game situations. Together, this combination enhances shooting performance in soccer players.

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