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Effect of various training method on kicking ability in soccer

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Abstract

SAQ, plyometric exercise, and skipping rope exercise all significantly affect athletic performance. Previous studies have shown the effects of strength training, plyometric training, and SAQ on motor abilities and soccer play. The goal about this learning was to resolve how 8 weeks of skipping rope teaching and a mix of SAQ and plyometric training affected the performance of soccer players. According to the study's findings, compared to the control and skipping rope training groups after eight weeks of training, the combination of SAQ and plyometric training group demonstrated improved soccer playing skill.

Keywords: SAQ, plyometric training, skipping rope training and soccer

Introduction

Soccer is a religion, a passion, and a hope to those who follow it. Soccer is very popular all around the world; people play it for enjoyment and competition. Soccer games are a lot of fun to watch for both players and spectators. Soccer is a game that requires a lot of exercise and draws young people from all over the world. History of soccer is obscure. But it's important to acknowledge that soccer has traditionally attracted attention on a worldwide scale. England is where modern soccer first began. The rules were set in 1863 by the English Soccer Association. All higher scientific theories have called for a game due to soccer's rising popularity. A particular and appropriate assessment strategy is needed in order to assess their overall soccer ability and predict their performance.

Over time, soccer training has changed dramatically. The level of training specialization for young athletes today has significantly increased over time. A young athlete kicking a ball while dashing around a field is a thing of the past. For the development of young soccer players, youth academies follow a detailed development plan that changes from year to year and from club to club. A crucial aspect of how today's youngsters should be taught is the timing of when and how players start learning a new skill. Timing, as they say, is everything. Elite players' most important attributes should be emphasised throughout training. Top athletes undertake 28% more high-intensity training and sprinting than normal athletes [8].

Soccer's long season requires non-linear periodization. Off-season for functional strength, early pre-season for maximisation, late pre-season for muscular power and endurance, in-season for maintenance. Young soccer players may enhance their vertical leap, shooting power, and 30m sprint by combining strength and power training with aerobic endurance [5].

First-stage strength training is effective. Muscle cross-sectional area rises by 23% and peak strength by 91.7% after 100 days of resistance training. Cross-sectional muscle area and strength are connected [6]. Athletes must start strength training immediately. 16-year-olds should start lifting weights after learning the right methods and developing motor skills. A world-class athlete needs strength training to improve. For optimum results, couple strength training with SAQ and/or plyometrics. Complex training helps athletes avoid injuries and enhance running speed, acceleration, leaping ability, kick, tackle, and header power [7].

SAQ (Speed, Agility, and Quickness) coaching should be part as for soccer conditioning. Agility is the capacity to move fast and change direction or velocity in response to a stimulus, according to Baechle (1994) [1].

Quickness is a capability to read along with respond through the situation; that is comprises explosiveness, reactivity, and acceleration. Strength, power, speed, agility, balance, stability, flexibility, along with endurance are all necessary for playing soccer. A typical SAQ session involves explosive movements to evolve from fundamental to location-specific movement patterns. Speed, agility, and quickness training (SAQ) improves speed and explosiveness by teaching the basic procedures to perform movements.

Because of SAQ training, top players-but not amateurs-were able to alter their body positions to improve balance, strength, and control without slowing down. Reilly et al. say players must be fit to manage the game's demands. Coaches must prepare their athletes for competitiveness by improving their sport-specific talents [4].

Found no evidence that combining strength and plyometric training benefits professional soccer players who play 6–8 games per week. Strength training increases soccer players' strength and power. Shane McDermott studied how plyometric, SAQ, and regular training affects young soccer players' speed, agility, leaping, and shooting. Two replacement sprinting sessions are acceptable. Skipping rope improves football players' speed, agility, and knee health. Skipping rope strengthens football players' ankles, knees, and core. With reference to past research, we expected that diverse forms of training, such as plyometrics, Skipping Rope Training, and SAQ, would be more successful at enhancing soccer players' performance. The motive about the study was through ascertain out the Influence of Skipping Rope Training along with combination of SAQ besides plyometric learning on soccer playing ability.

Method

Selection of Subject

Thirty men football player of age allying 18 to 25 ages were elected randomly Pondicherry University. Three equal groups of 15 each were selected from the selected subjects. Experimental Group I (n=15) acted as control group as not given any sort of specific training Group II (n=15) underwent Skipping Rope Training along with Group III (n=15) underwent combination of SAQ and Plyo-metric training.

Study Design

Plyometric sessions trained lower limbs' maximum and explosive strength. Each workout included 2-4 sets of 6–8 reps. Six plyometric exercises include squat jumps, hurdle jumps, and single-leg leaps and two-footed ankle hoops. Only upwards, downwards, forwards, or backwards jumps were allowed. Before week 6, contacts rose from 72 to 128. Since conventional core exercises are essential, they will be included.

SAQ workouts comprised diagonal and multidirectional sprints. Each session included 4–8 reps of 3-6 exercises. 15-yard (triangle) turn drill, z-pattern run, Mirroring player, etc. Both groups had the same time off.

Seven jump rope workouts are repeated every 60 seconds. Workouts included forward, backward, alternating, side-to-side, single-leg left, single-leg right, and double leaping.

The control group performed easy-to-difficult technical and positional tasks (small-to-large, 2 vs. 2 attacking, 2 vs. 2 defensive, and tactical games with a variety of goals).

McDonald Soccer Test

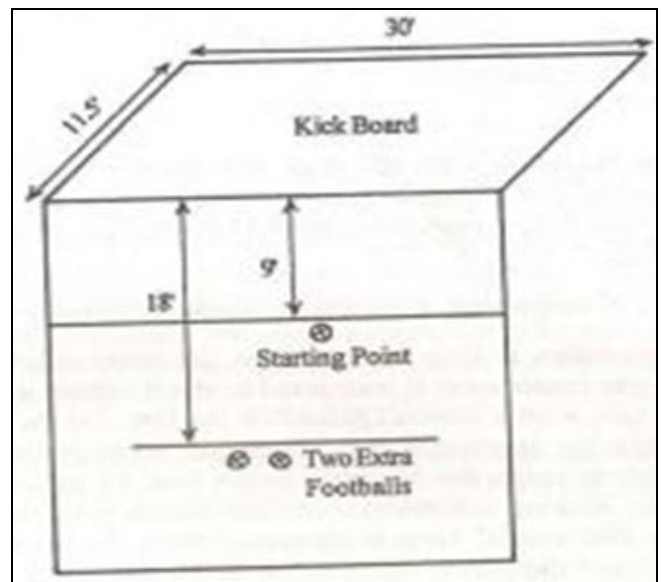


Fig 1: Measurement of test short pass and receiving kickboard

- **Purpose:** To assess general soccer kicking ability.
- **Equipment and material:** It is necessary to have a soccer ball, a stopwatch and a backboard that is 24 feet wide and 8 feet high. The dimensions of this target are the same as those of a soccer goal. The restraining line is marked 15 feet from the wall. Behind the restraining line, 15 feet away, there is a ball box for spare balls. (McDonald, 1951)
- **Direction:** Behind the restraining line, the subjects hold a soccer ball. As far as cue. In 30 seconds, a ball is kicked against a backboard by the subject. Kick the ball from behind the restraining line. Whether subjects lose ball, fellows may use spare or identical ball. Thirty-second traces.(McDonald, 1951)
- **Scoring:** There were more legal kicks than in any other trail.

Intervention schedule

Week -1 - Accommodation sessions

Week 0 - pre testing

Week 8 - Post testing

Result

In order to determine whether the groups differed significantly, the analysis of covariance (ANCOVA) was used. 0.05 was used as the level of confidence for assessing group significance.

Table 1: Levene's Test of Equality of Error Variances^a

F	df1	df2	Sig.
.038	2	42	.963

Table 1 represents the value of Levene's test. The Levene's is an assumption for ANCOVA test for determining homogeneity of group. The obtained value for Levene's test is 0.963 which is more than 0.05 and hence the assumption of equality of variance is not violated. As a result, the null hypothesis that the population means of the three groups are equal is disproved, and it is possible to draw the conclusion that the experimental and control groups' soccer abilities differ.

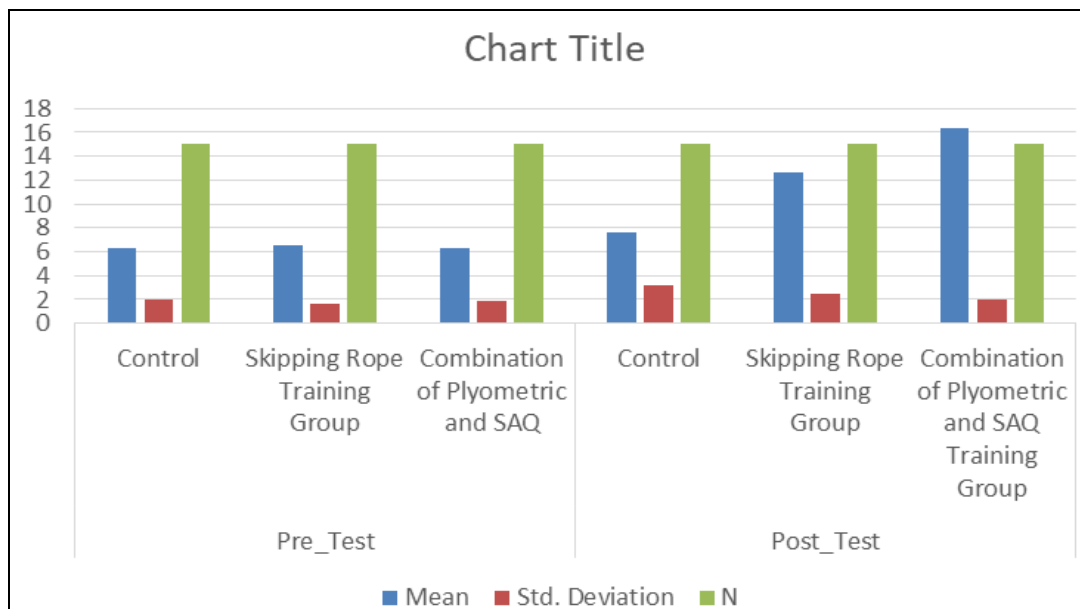


Fig 2: Graphical representation of mean and std. deviation of soccer performance

Table 2: Descriptive statistics

Groups		Mean	Std. Deviation	N
Pre-Test	Control	6.2667	1.98086	15
	Skipping Rope Training Group	6.5333	1.64172	15
	Combination of Plyometric and SAQ	6.3333	1.87718	15
Post-Test	Control	7.6667	3.19970	15
	Skipping Rope Training Group	12.6667	2.43975	15
	Combination of Plyometric and SAQ	16.4000	1.99284	15

Table 3: Tests of Between-Subjects Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Pre-Test	53.303	1	53.303	9.545	.004
Groups	568.888	2	284.444	50.935	.000
Error	228.964	41	5.584		
Corrected Total	858.311	44			

a. R Squared = .733 (Adjusted R Squared = .714)

Table-2 represents the descriptive statistics of pre-test as well as post-test performance of selected groups. For pre-test control group mean and standard deviation was 6.26±1.98 respectively, the Skipping Rope Training Group mean and standard deviation was 6.53±1.64 respectively, the Combination of Plyometric and SAQ Training Group mean and standard deviation was 6.33±1.87 respectively.

For post-test control group mean and standard deviation was 7.6±3.1 respectively, the Skipping Rope Training Group mean and standard deviation was 12.6±2.43 respectively, the Combination of Plyometric and SAQ Training Group mean and standard deviation was 16.40±1.99 respectively.

Table-3 compares three groups' adjusted means of the criteria variable (Control Group, Skipping Rope Training Group, and Combination of Plyometric and SAQ Training Group). F-statistics for chosen groups are significant since their p-values are less than .05. So, at a 5% level, it is possible to reject the null hypothesis that there was no change in the adjusted means for the criterion variable (soccer performance) across the three treatment groups.

Table-4 shows post hoc comparisons of the adjusted means of the three treatment groups because F-statistic is significant. The p-value for the mean difference between the Control group and the Skipping Rope Training Group is .000. Since p value is smaller than .05, both mean differences are significant at 5% level.

Table 4: Pair wise Comparisons

Dependent Variable: Post-Test						
(I) Groups		Mean Difference (I-J)	Std. Error	Sig. ^b	95% Confidence Interval for Difference ^b	
					Lower Bound	Upper Bound
Control	Skipping Rope Training Group	-4.837*	.865	.000	-6.583	-3.091
	Combination of Plyometric and SAQ	-8.692*	.863	.000	-10.435	-6.950
Skipping Rope Training Group	Control	4.837*	.865	.000	3.091	6.583
	Combination of Plyometric and SAQ	-3.856*	.864	.000	-5.600	-2.111
Combination of Plyometric and SAQ	Control	8.692*	.863	.000	6.950	10.435
	Skipping Rope Training Group	3.856*	.864	.000	2.111	5.600

Table 4 represents post hoc analysis, for selected groups. There was significant ($p < 0.05$) value obtained for all the pair wise comparison. The mean differences between the chosen groups were quite different. Combination of Plyometric and SAQ training group mean was highest when compared to control and Skipping Rope Training Group which was 8.69 and 3.85 respectively.

Discussion on findings

The surprising results of this study revealed that 8 weeks of SAQ and plyometric combo training significantly improved soccer play. Studies by Milanovic et al. (2013), Malina et al. (2000), (Saez de Villarreal et al. 2015) and Söhnlein et al (2014) also reported similar result for increased soccer performance.

Plyometric training focuses creating the most power in the quickest time, then regulating and using it to halt, change direction, or kick the ball. Plyometrics improves muscular strain tolerance. SAQ improves response speed, direction change, co-ordination, balance, and neuromuscular activity (Brown et al. 2005). This is the most prevalent soccer training strategy. This training programme develops soccer's various movement patterns. Soccer sprints often include direction adjustments. SAQ should train all soccer components. Power, speed, and quickness are all enhanced by SAQ training, but agility with furthermore without the ball is not. This workout only improves lateral agility, not linear. SAQ training has advantages. Therefore, linear speed, agility, and quickness are independent motor skills.

Conclusion

Consequently, the following inferences can be made:

Skipping rope training group and control group had significantly different adjusted means of criterion variable (soccer performance). An adjusted means of the criterion variable (soccer performance) vary significantly between the Plyometric and SAQ group along with the Control group. An adjusted means of the criterion variable (soccer performance) are significantly different between the Plyometric and SAQ and Skipping Rope Training groups.

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