

**Isolated and Combined Effect of SAQ and Interval Training
Protocols on skill Performance of Football Players**

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ABSTRACT

The purpose of this investigation was to analyze the isolated and combined effect of SAQ and interval training on skill performance of football players. To attain these objectives, 60 male inter-collegiate level football players in the age of 18-23 years from various colleges affiliated to Davanagere University, Karnataka state, India during the academic year 2022-2023 were preferred. The chosen subjects (N=60) were classified into four equivalent groups of fifteen participants each (n=15) at random. Group-I was assigned SAQ training, group-II was assigned interval training, group-III was assigned combined (SAQ & interval) training and group-III was control. The training duration for all three groups was restricted to 12 weeks (3days/week). The skill performance was preferred as dependent variable. The data collected from the experimental and control groups on selected dependent variable was statistically analyzed by paired 't' test. Additionally, percentage of changes was also calculated. Further, the data collected from the four groups prior to and post experimentation on selected dependent variable was statistically analyzed to find out the significant difference if any, by applying the Analysis of Covariance (ANCOVA). Whenever the obtained 'F' ratio value was found to be significant for adjusted post test means, the Scheffe's test was applied as post hoc test. In all the cases the level of confidence was fixed at 0.05 level for significance. In response to SAQ, interval and combined training the men football player's skill performance was enhanced considerably.

Key Words: *SAQ and Interval training, Skill performance, Football players*

INTRODUCTION

Football is the world's most popular sport with the Federation of the International Football Association (FIFA) estimating that more than 270 million people are actively involved in the sport worldwide. In recent years, there has been a remarkable expansion in and acceptance of sports science, and specifically strength and conditioning (S&C), within soccer. This discipline is recognized as a valid area of scientific and professional practice, with strength and conditioning practitioners becoming key members of the multidisciplinary coaching team.

Football (soccer) is one of the most complex sports in the world, where players need technical, tactical, and physical skills to achieve a successful performance, and eventually to win a game (Yi et al., 2018). A team's performance depends on the cooperative interactions between players that play at different playing positions (Aquino, et al., 2020). For instance, the main role of midfielders is to organize the offence through proper ball control and

passes, while the main duties of defenders are to win aerial duels and tackles or to perform interceptions of the balls passed to attackers (Yi et al., 2018; Modric, et al., 2019). Understanding of these position-specific demands is crucial in the evaluation of players' achievement (Carling, Williams & Reilly, 2005).

Competitive sports have assumed great importance in India and there is increasing demand that a specific SAQ, interval and combined training for various sports should be constructed for all levels and sports training should start at younger age. There is less empirical research supporting the efficacy of SAQ, interval and combined training conditioning in football field. Without supporting evidence as either an isolated training technique or an addition to a program, it is not possible to confidently support the inclusion of SAQ training in a structured conditioning program. This is an urgent demand of the competitive era. It is therefore, necessary to find out the influence of SAQ, interval and combined training programs.

Nowadays coaches use combined training to help people reach peak physical condition. When used correctly, it can be a highly effective form of training, especially when combined with a suitable training program. Combined training has gained popularity as a training strategy. Anecdotal reports recommend training in this fashion in order to improve fitness performance. Recently, several studies have examined the effectiveness of combined training. Despite the fact that questions remains about the potential effectiveness and implementation of this type of training. The results of recent studies are useful in guiding practitioners in the development and implementation of combined training programs.

Though many methods prevail to develop biomotor, psychomotor and skill performance variables, the role of SAQ, interval and combined training is an undisputed one, lot of researches has been carried out on the effects of SAQ, interval and combined training workout, however still the bone of debate is concerning the time period required to obtain the maximum gain. Specialist vary in their observation based on their investigation, many training studies have been conducted in overseas countries using the sophisticated implements (instruments) and devices accessible there. Only few investigations have been completed in India, in the fields of efficient SAQ, interval and combined training on skill performance of football players.

METHODOLOGY

Subjects and Variables

To attain these objectives, 60 male inter-collegiate level football players in the age of 18-23 years from various colleges affiliated to Davanagere University, Karnataka state, India during the academic year 2022-2023 were preferred. The chosen subjects (N=60) were classified into four equivalent groups of fifteen participants each (n=15) at random. Group-I was assigned SAQ training, group-II was assigned interval training, group-III was assigned combined (SAQ & interval) training and group-III was control. The passing skill performance was chosen as dependent variable and it was assessed by Mor-Christian General Soccer Ability Skill Test battery.

Training Protocol

Following the initial assessments the specifically planned training programme was implemented to the training group-I, which is speed, skill and quickness training (SAQ). The working out sessions was conducted during every Monday, Wednesday, and Friday (3days/week) over a period of 12 weeks. The SAQ training sessions were supervised by experienced coaches. The experimental group undertook three SAQ training sessions every week. Training sessions were progressively prepared to steadily raise the intensity over 12 weeks. The procedure adopted for the adjustment of load is as follows: Nine SAQ drills were given and the duration fixed to perform each exercise was 25 seconds. The training load was kept low to moderate in the first week and increased progressively in proceeding week moderate to high. The number of sets performed was increased progressively. The work rest ratio of 1:1 between exercise and sets was given.

The experimental group-II performed interval training alternatively three days a week for 12 weeks. In this present investigation, continuous running for a period of 3 minutes was given to the subjects as interval training. To fix the training load for the interval training group the subjects were examined for their exercise heart rate in response to different work bouts, by performing continuous running of three minute duration for proposed repetitions and sets, alternating with active recovery based on work-rest ratio. The subject's training zone was computed using the Karvonen formula and it was fixed at 55%HRmax to 80%HRmax. The work rest ratio of 1:1 between repetitions and 1:2 between sets was given. The experimental group-III performed combined training (SAQ & interval)

alternatively three days a week. The combined SAQ and interval training group performed aerobic training during every odd numbered week and SAQ training during every even numbered week

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. The data collected from the four groups prior to and post experimentation on skill performance was statistically analyzed, by applying the Analysis of Covariance (ANCOVA). Since, four 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. The level of confidence is fixed at 0.05 for significance.

RESULT

The obtained results through the application of paired ‘t’ test statistical technique, in order to estimate the effectiveness of SAQ, interval and combined training (SAQ, IT&CT) among men football player’s passing ability is put on view in table-1.

Table – 1:Obtained ‘t’ Test Result on Passing Ability of SAQ, Interval, Combined and Control (SAQ, IT, CT & CG) Men Football Players

Group	Test	N	Mean	SD	DM	‘t’ - ratio	%
Interval Training (IT)	Pre	15	7.47	1.25	1.26	5.55	16.87
	Post		8.73	1.10			
SAQ Training (SAQ)	Pre	15	7.73	1.16	2.73	7.63	35.32
	Post		10.47	0.92			
Combined Training (CT)	Pre	15	7.53	1.19	2.40	18.33	31.87
	Post		9.93	1.49			
Control(CG)	Pre	15	7.87	1.41	2.00	0.40	25.41
	Post		7.67	1.45			

*Table value for df 14 is 2.14(*significant)*

The derived results through the application of paired ‘t’ test statistical technique proved that the mean difference found between initial(pre) and final (post) data of SAQ, interval and combined training (SAQ, IT&CT) group’s vary clearly, as the paired ‘t’ values 5.55(AT), 7.63 (SAQ), and 18.33(CT) are more than table(df14=2.14) value required. In response to interval (IT =16.87%), SAQ (35.32%) and combined training (CT= 31.87%) men football player’s ball passing ability was enhanced considerably.

In the below given table (table-2), the derived ANCOVA statistic results on passing ability of SAQ, interval and combined training (SAQ, IT&CT) and control group’s men football players are displayed.

Table – 2:Obtained ANCOVA Results on Passing Ability of SAQ, Interval, Combined and Control (SAQ, IT, CT & CG) Group’s Men Football Players

	Interval Training (IT)	SAQ Training (SAQ)	Combined Training (CT)	Control (CG)	SoV	SS	df	MS	‘F’ ratio
Adjusted Mean	8.82	10.43	9.99	7.56	B	74.03	3	24.68	19.58*
					W	69.30	55	1.26	

(Table value for df 3 & 55 is 2.77)*Significant (.05 level)

The resultant ‘f’ ratio of 19.58 derived through ANCOVA statistics proved that the adjusted(posttest) mean values on passing of interval (IT =8.82), SAQ (10.43), combined training (CT= 9.99) as well as control groups (CG=7.56) men football players differ from one another. Because the obtained ANCOVA ‘F’ value (19.58) on passing skill of SAQ, interval and combined training (SAQ, IT&CT) and CG is more than 2.77 (table value) degrees of freedom (df) 3 and 55. The derived Scheffe’s Test (post hoc) results on passing ability of SAQ, interval and combined training (SAQ, IT&CT) and control group’s men football players are displayed.

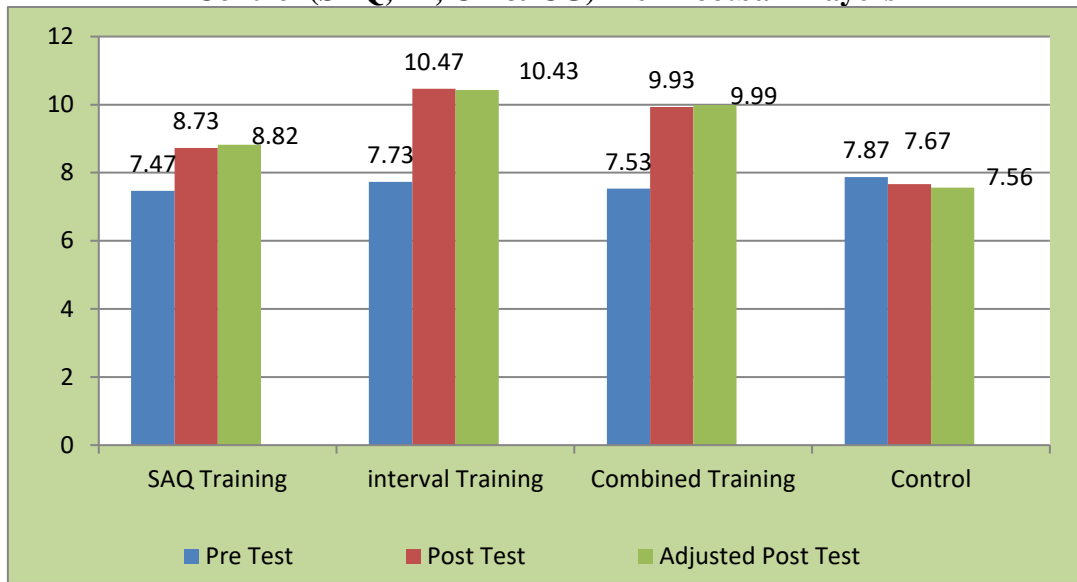
Table – 3: Obtained Scheffe’s Test Result on Passing Ability of SAQ, Interval, Combined and Control (SAQ, IT, CT & CG) Men Football Players

Interval Training	SAQ Training	Combined Training	Control (CG)	MD	CI
8.82	10.43			1.61*	1.17
8.82		9.99		1.17*	1.17
8.82			7.56	1.26*	1.17
	10.43	9.99		0.44	1.17
	10.43		7.56	2.87*	1.17
		9.99	7.56	2.42*	1.17

*Significant (.05)

The applied post hoc test (Scheffe’s) statistics make clear that as a result of interval (IT =1.26), SAQ (2.87), combined training (CT= 2.42) the men football players passing skill was reduced to a great extent, because these differences between means (1.26, 2.87 & 2.42) are more than 1.17 (CI value). Though, SAQ training (SAQ) and combined (CT) training protocols were much better than interval (IT) (MD=1.61&1.17) because these mean differences (MD) are higher than 1.17 (CI). But, insignificant difference found between SAQ training and combined training (CT) (MD=0.44).

Figure – I: Figure Showing the Passing Mean Scores of SAQ, Interval, Combined and Control (SAQ, IT, CT & CG) Men Football Players



DISCUSSION

The results of the present study reveal that interval, SAQ and combined training have significantly altered the football skill performances. Shivaji, Saraboji and Murugan (2013) findings have strongly indicates that 12 weeks of S.A.Q. training have significant effect on selected skill performance variables i.e., serving and passing ability of junior volleyball players. Karthick et al., (2016) investigated effects of SAQ training on selected physical fitness parameters and kicking ability of High School Level male Football Players. They concluded that SAQ training significantly improved the selected physical fitness parameters and kicking ability of High School Level male Football Players. Senthilkumar and Annadurai (2014) explored the effects of isolated and combined SAQ and strength training on selected skill performance variables of intercollegiate men football players. Findings reveals significant difference among isolated and combined SAQ and strength training in

developing the skill performance variables of intercollegiate men football players. Milanovic et al., (2013) suggests that SAQ training is an effective way of improving agility, with and without the ball, for young soccer players and can be included in physical conditioning programmes.

Senthilkumar and Annadurai (2014) explored the effects of isolated and combined SAQ and strength training on selected skill performance variables of intercollegiate men football players. Findings reveals significant difference among isolated and combined SAQ and strength training in developing the skill performance variables of intercollegiate men football players. García-Pinillos et al., (2014) determine the effects of a 12-week contrast training (CT) program, with no external loads, on the vertical jump, kicking speed, sprinting, and agility skills of young soccer players. Results suggest that a specific CT program without external loads is effective for improving soccer-specific skills such as vertical jump, sprint, agility, and kicking speed in young soccer players.

CONCLUSION

In response to interval (IT =16.87%), SAQ (35.32%) and combined training (CT= 31.87%) men football player's ball passing ability was enhanced considerably. Though, SAQ training (SAQ) and combined (CT) training protocols were much better than interval (IT) training but, insignificant difference found between SAQ training and combined training (CT). The outcome of this study indicates the importance of a well-planned program of conditioning that leads to improvement in performance of the players, the great importance of strength and conditioning specialist in implementing the training program, and the importance of choosing the time of the year to implement such conditioning training programs.

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