INFLUENCE OF INTERVAL TRAINING AND SPECIFIC PACKAGE OF SKILLTRAINING ON SELECTED PHYSIOLOGICAL AND SKILL PERFORMANCE VARIABLES AMONG SCHOOL FOOTBALL PLAYERS

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 Abstract

Interval training is essential for players to acclimate their bodies to the demands of racing conditions, effectively managing race-pace and elevated lactate levels in the muscles. When compared to alternative training methods, interval training stands out by efficiently adapting to racing conditions while imposing minimal physiological strain. To excel on the football field, players must not only hone their skills but also master the diverse aspects of the game. Achieving professional competence requires dedicated practice of various drills to perfection. In addition to the diligence in drill work, the chosen training methodology significantly influences the quality of performance on the football field. This study attempts to estimate the influence of interval training and specific package of skill training on selected physiological and skill performance variables among school football players. To attain this purpose, 60 football players (boys) from various schools of Chennai District, Tamil Nadu, were randomly selected as subjects. The age of the boys ranged between 16 and 18 years. The boys were divided into four groups of equal number of 15 students each. Three of these groups were taken as three Experimental groups and the fourth group remained the Control group. Before the start of the training, the players were made to take a 'Pre-test' for vital capacity, dribbling and kicking. Each group was assigned a specific method of training: Isolated Interval Training was allotted to Experimental Group I; Isolated Specific Package of Skill Training was allotted to Experimental Group II; Combined Interval Training and Specific Package of Skill Training was allotted to Experimental Group III and the last group - Control Group - was allotted no training except their daily routine. All three experimental groups were trained for a period twelve weeks. Post-Training tests were taken once this twelve-week training period was

over. The data noted in this process was analyzed using the statistical tools of ANCOVA and Scheffe's Post hoc Test. The study affirmed that Experimental Group III, that was given Combined Interval training and Specific Package of Skill Training, showed significant improvement in physiological and skill performance variables when compared to other groups.

Keywords: Interval Training, Specific Package of Skill Training, physiological and skill performance variables, ANCOVA.

INTRODUCTION

Interval training is a form of progressive conditioning in which the intensity of the activity, the duration of each bout, the number of bouts, the time or kind of rest periods between bouts or the order of the bouts are varied. The variables associated with interval training include the number of repetitions, the duration of effort, work intensity and duration of recovery**.(Dhayanithi R., 1991).**

The rest period during workout is the main part in this method. The load of work in this method is mainly decided by taking the period of rest in consideration. In this method, the heart rate in intervals between the runs is controlling factor. After workout the heart rate in the rest period when comes around 120 beats per minute, the athlete is allowed to restart the work out in same manner as was in previous**.(Pathak, Minakshi., 2015)**

Skill is undoubtedly one of the most essential factors for a football player who uses it automatically. Skill is a natural prerequisite of a good football player for solving all requirements at any stage of the game." **(Saha, Sukumar., 2008).** Football drills are one of the vehicles that develop great football players, whether the drills are done alone in a team setting. Proper performance of a drill is a key to the overall success of that particular football drill. It is not the drill alone that delivers successful footballers and teams**.(Owen Al., 2011)**

METHODOLOGY

The purpose of the study, presented in this paper, was to evaluate the influence of interval training and specific package of skill training on selected physiological and skill performance variables among school football players. To attain this purpose, 60 football players (boys) from various schools of Chennai District, Tamil Nadu, were randomly selected as subjects and their age was between 16 and 18years. True random group design was implemented in this study which consisted of a pre-test and post-test. The subjects (n=60) were randomly separated into four equal groups of fifteen subjects in each group. The groups were Experimental Group I assigned as

'Isolated Interval Training Group'; Group II assigned as 'Isolated Specific Package of Skill Training'; Group III assigned as 'Combined Interval Training and Specific Package of Skill Training'; Group IV assigned as 'Control Group'. The investigator administered Digital Spirometer and Morgan Christian General Soccer Ability Test, 1979 as cited in Yobu A, 2010 as cited in Yobu A 2010. Tests to measure vital capacity, and dribbling. Pre-test was conducted for all the subjects on Vital Capacity and dribbling. The experimental groups participated in their respective isolated interval training, isolated specific package of skill training and combined interval training and specific package of skill training for a period of twelve weeks. The post-test was conducted on vital capacity and dribbling after twelve weeks of respective trainings.

STATISTICAL TECHNIQUE

The following statistical techniques were used to find-out influence of interval training and specific package of skill training on selected physiological and skill performance variables among football players (boys) between the ages 16 and 18 years.

Analysis of covariance (ANCOVA) statistical technique was used to test the adjusted post test mean differences among the experimental groups. If the adjusted post test result was significant, the Scheffe's post-hoc test was used to determine the significance of the paired mean differences.

TABLE - I

COMPUTATION OF ANALYSIS OF COVARIANCE OF VITAL CAPACITY (in Litters)

	Isolated Interval Training Group (IITG)	Isolated Specific Package of Skill Training Group (ISPSTG)	Combined Training Group (CTG)	Control Group (CG)	Sources of Variance	Sum of Squares	df	Mean squares	Obtained F-ratio
Pre-Test Means	3.74	3.75	3.76	3.76	Between	0.002	3	0.001	1.42
					Within	0.02	56	0.001	
Post-Test Means	3.85	3.81	3.95	3.75	Between	0.33	3	0.11	244.69*
					Within	0.03	56	0.001	
Adjusted Post-Test Means	3.86	3.81	3.95	3.75	Between	0.33	3	0.11	349.05*
					Within	0.02	55	0.001	

Table F ratio at 0.05 level of confidence for 3 and 55 (df) = 2.77,

3 and 56(df) =2.77.

*Significant at 0.05 level

Table I showed the results of ANCOVA for the pre-test mean scores of isolated interval training group (IITG), isolated specific package of skill training group (ISPSTG), combined training group (CTG) and control group (CG) were 3.74, 3.75, 3.76 and 3.76 respectively. The obtained F value of pre-test means of 1.42 was less than the required table F value of 2.77, which proved that the random assignment of the subjects was successful and their scores in vital capacity before the training were equal and there was no significant difference at 0.05 level of confidence for the degree of freedom 3 and 56.

The post-test means of the isolated interval training group (IITG), isolated specific package of skill training group (ISPSTG), combined training group (CTG) and control group (CG) were 3.85, 3.81, 3.95 and 3.75 respectively. The obtained F value on the scores of post-test means of 244.69 was greater than the required table F value of 2.77. Hence, there was significant difference between the post-test means at 0.05 level of confidence for the degree of freedom 3 and 56.

The adjusted post-test means of the isolated interval training group (IITG), isolated specific package of skill training group (ISPSTG), combined training group (CTG) and control group (CG) were 3.86, 3.81, 3.95 and 3.75 respectively.   The obtained F value of adjusted post-test means of 349.05 was greater than the required table F value of 2.77. Hence, there was significant difference between the adjusted post-test means at 0.05 level of confidence for the degree of freedom 3 and 55.

Since noteworthy contrasts were recorded, the outcomes were subjected to post hoc investigation utilizing Scheffe's post hoc test. The outcomes were displayed in table- II.

TABLE - II
COMPUTATION OF ANALYSIS OF SCHEFFE'S POST-HOC TEST OF VITAL CAPACITY (In Litters)

Isolated Interval Training Group (IITG)	Isolated Specific Package of Skill Training Group (ISPSTG)	Combined Training Group (CTG)	Control Group (CG)	Mean Difference (MD)	C.I. Value
3.86	3.81			0.05^*	
3.86		3.95		0.09^*	
3.86			3.75	0.11^*	
	3.81	3.95		0.14^*	0.03
	3.81		3.75	0.06^*	
		3.95	3.75	0.20^*	

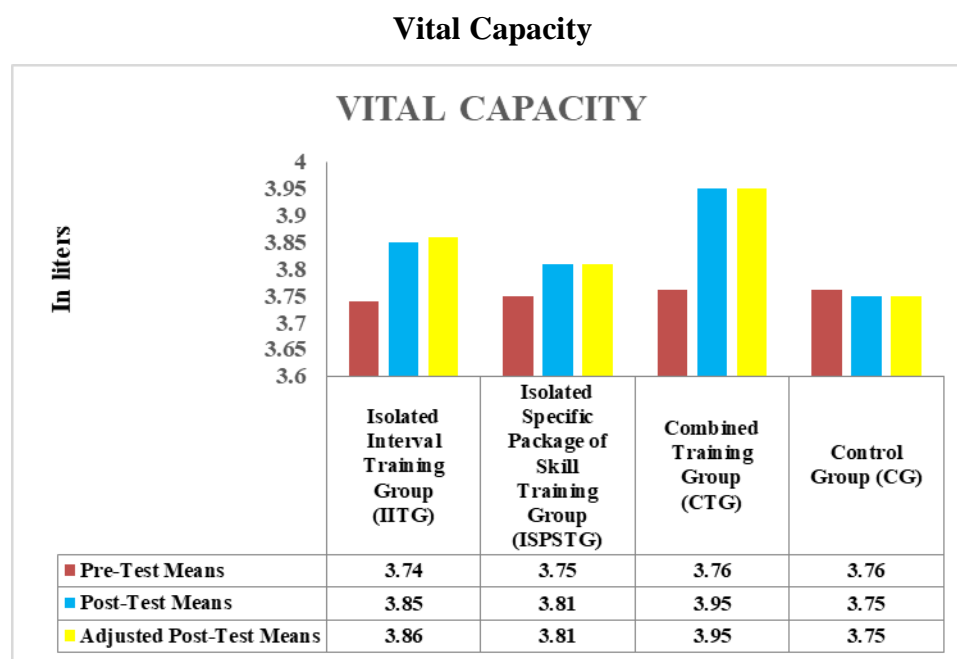Table F ratio at 0.05 level of confidence for 3 and 55 (df) = 2.77.

*Significant at 0.05 level.

The table 4.10 showed that the adjusted post-test mean difference on vital capacity between IITG and ISPSTG, IITG and CTG, IITG and CG, ISPSTG and CTG, ISPSTG and CG, CTG and

CG were 0.05, 0.09, 0.11, 0.14, 0.06 and 0.20 respectively which were higher than the confidence interval value of 0.03 and significant at 0.05 level of confidence.

The pre-test, post-test and adjusted post-test mean values of IITG, ISPSTG, CTG and CG on vital capacity were graphically represented in figure - I

Figure-1 Bar Diagram on Pre-Test Mean, Post-Test Mean and Adjusted Post-Test Mean of

Vital Capacity

	Isolated Interval Training Group (IITG)	Isolated Specific Package of Skill Training Group (ISPSTG)	Combined Training Group (CTG)	Control Group (CG)
■ Pre-Test Means	3.74	3.75	3.76	3.76
■ Post-Test Means	3.85	3.81	3.95	3.75
■ Adjusted Post-Test Means	3.86	3.81	3.95	3.75

DISCUSSION ON THE FINDINGS OF VITAL CAPACITY

The result presented in the table 4.9 showed that obtained adjusted post -test means on vital capacity among isolated interval training group (IITG) was 3.86, isolated specific package of skill training group (ISPSTG) was 3.81, combined training group (CTG) was 3.95 and control group (CG) was 3.75.

The difference among pre-test, post-test and adjusted post-test mean scores of the subjects were statistically treated using ANCOVA and F value were 1.42, 244.69 and 349.05 respectively. It was found that obtained F value of pre-test means 1.42 was not significant at 0.05 level of confidence and also lesser than the required table F value of 2.77 and the obtained F values of post-test and adjusted post-test means 244.69 and 349.05 were significant and also greater than the required table F value of 2.77.

The post hoc analysis through Scheffe's confidence test proved that due to twelve weeks training of combined training group, isolated interval training group and isolated specific package

of skill training group significantly improved better than the control group, clearly indicating positive influences of combined training group, isolated interval training group and isolated specific package of skill training group in improving the vital capacity among school boys football players. Further, combined training group significantly improved better than the isolated interval training group, specific package of skill training group in vital capacity among school boys football players.

The findings of the study were in agreement with the findings of **Rajan G., Kasi (2018)** and **Madhankumar T. (2012)** who found significant improvement in vital capacity due to regular training.

TABLE - III

COMPUTATION OF ANALYSIS OF COVARIANCE OF DRIBBLING (In Seconds)

	Isolated Interval Training Group (IITG)	Isolated Specific Package of Skill Training Group (ISPSTG)	Combined Training Group (CTG)	Control Group (CG)	Sources of Variance	Sum of Squares	df	Mean squares	Obtained F-ratio
Pre-Test Means	16.39	16.35	16.66	16.40	Between	0.89	3	0.30	1.33
					Within	12.47	56	0.22	
Post-Test Means	15.77	15.66	15.54	16.42	Between	6.88	3	2.29	10.61[*]
					Within	12.11	56	0.22	
Adjusted Post-Test Means	15.83	15.75	15.34	16.46	Between	9.36	3	3.12	374.54[*]
					Within	0.46	55	0.01	

Table F ratio at 0.05 level of confidence for 3 and 55 (df) = 2.77,

3 and 56(df) =2.77.

*Significant at 0.05 level

RESULTS OF DRIBBLING

Table III showed the results of ANCOVA for The pre-test mean scores of isolated interval training group (IITG), isolated specific package of skill training group (ISPSTG), combined training group (CTG) and control group (CG) were 16.39, 16.35, 16.66 and 16.40 respectively. The obtained F value of pre-test means of 1.33 was less than the required table F value of 2.77, which proved that the random assignment of the subjects was successful and their scores in dribbling before the training were equal and there was no significant difference at 0.05 level of confidence for the degree of freedom 3 and 56.

The post-test means of the isolated interval training group (IITG), isolated specific package of skill training group (ISPSTG), combined training group (CTG) and control group (CG) were 15.77, 15.66, 15.54 and 16.42 respectively. The obtained F value on the scores of post-test means of 10.61 was greater than the required table F value of 2.77. Hence, there was significant difference between the post-test means at 0.05 level of confidence for the degree of freedom 3 and 56.

The adjusted post-test means of the isolated interval training group (IITG), isolated specific package of skill training group (ISPSTG), combined training group (CTG) and control group (CG) were 15.83, 15.75, 15.34 and 16.46 respectively.   The obtained F value of adjusted post-test means of 374.54 was greater than the required table F value of 2.77. Hence, there was significant difference between the adjusted post-test means at 0.05 level of confidence for the degree of freedom 3 and 55.

Since noteworthy contrasts were recorded, the outcomes were subjected to post hoc investigation utilizing Scheffe's post hoc test. The outcomes were displayed in table- IV.

TABLE - IV

COMPUTATION OF ANALYSIS OF SCHEFFE'S POST-HOC TEST OF DRIBBLING

(In seconds)

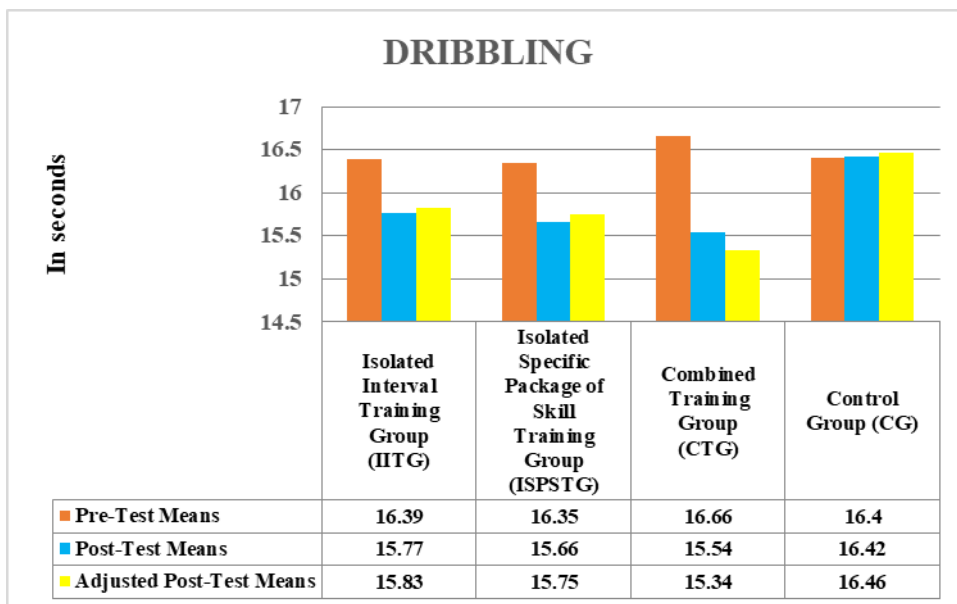| Isolated Interval Training Group (IITG)	Isolated Specific Package of Skill Training Group (ISPSTG)	Combined Training Group (CTG)	Control Group (CG)	Mean Difference (MD)	C.I. Value
15.83	15.75			0.08	
15.83		15.34		0.49*	
15.83			16.46	0.63*	0.49
	15.75	15.34		0.41	
	15.75		16.46	0.71*	
		15.34	16.46	1.12*	

Table F ratio at 0.05 level of confidence for 3 and 55 (df) = 2.77.

*Significant at 0.05 level.

The table 4.14 showed that the adjusted post-test mean difference on dribbling between IITG and ISPSTG, ISPSTG and CTG were 0.08 and 0.41 respectively which were lesser than the confidence interval value of 0.49 and not significant at 0.05 level of confidence. However, the adjusted post-test mean difference on dribbling between IITG and CG, ISPSTG and CG, CTG and CG were 0.63, 0.71 and 1.12 respectively which were higher than the confidence interval value of 0.49 and the adjusted post-test mean difference on dribbling between IITG and CTG was 0.49 which was equal the confidence interval value of 0.49 and significant at 0.05 level of confidence.

The pre-test, post-test and adjusted post-test mean values of IITG, ISPSTG, CTG and CG on dribbling were graphically represented in figure – II

Figure-II Bar Diagram on Pre-Test Mean, Post-Test Mean and Adjusted Post-Test Mean
of Dribbling

	Isolated Interval Training Group (IITG)	Isolated Specific Package of Skill Training Group (ISPSTG)	Combined Training Group (CTG)	Control Group (CG)
■ Pre-Test Means	16.39	16.35	16.66	16.4
■ Post-Test Means	15.77	15.66	15.54	16.42
■ Adjusted Post-Test Means	15.83	15.75	15.34	16.46

DISCUSSION ON THE FINDINGS OF DRIBBLING

The result presented in the table 4.13 showed that obtained adjusted post- test means on dribbling among isolated interval training group (IITG) was 15.83, isolated specific package of skill training group (ISPSTG) was 15.75, combined training group (CTG) was 15.34 and control group (CG) was 16.46.

The difference among pre-test, post-test and adjusted post-test mean scores of the subjects were statistically treated using ANCOVA and F value were 1.33, 10.61 and 374.54 respectively. It was found that obtained F value of pre-test means 1.33 was not significant at 0.05 level of confidence and also lesser than the required table F value of 2.77 and the obtained F values of post-test and adjusted post-test means 10.61 and 374.54 were significant and also greater than the required table F value of 2.77.

The post hoc analysis through Scheffe's confidence test proved that due to twelve weeks training of combined training group, isolated interval training group and isolated specific package of skill training group significantly improved better than the control group, clearly indicating positive influences of combined training group, isolated interval training group and isolated specific package of skill training group in improving the dribbling among school boys football players. Further, combined training group significantly improved better than the isolated interval training group, specific package of skill training group in dribbling among school boys football players.

The findings of the study were in agreement with the findings of **Karthick M. (2017)** and **Manoj Kumar A. (2012)** who found significant improvement in dribbling among football players due to regular training.

CONCLUSIONS

- ❖ The study was concluded that twelve weeks of Combined Interval Training and Specific Package of Skill Training had better improvement on vital capacity and dribbling than other groups.

- ❖ The research showed that Isolated   Interval Training and Isolated Specific Package of Skill Training also had significant improvement on vital capacity and dribbling than Control Group.

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