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R Ananda Kumar
Ph.D Research Scholar,
Department of Physical
Education S.R.K.V. College of
Arts and Science, Coimbatore,
Tamil Nadu, India

Dr. S Ramesh Kumar
Director of Physical Education,
Department of Physical
Education S.R.K.V. College of
Arts and Science, Coimbatore,
Tamil Nadu, India

Impact of field training with and without yogic practice on selected physical and performance variables among cricket players

R Ananda Kumar and Dr. S Ramesh Kumar

Abstract

The purpose of this study was to determine the impact of field training with and without yogic practice on selected physical, performance variables among the Cricket players. To achieve the purpose of the study, forty eight male inter-collegiate Cricket players studying in various colleges affiliated to Bharathiar University, Coimbatore, Tamil Nadu were randomly selected as subjects. Their age ranges from 18 to 25 years. The subjects were divided into three equal groups in which each group consisted of sixteen subjects and named Group-I as field training group, Group-II as field training combined with yogic practice group, Group-III as Control group. The field training package was specifically designed to improve the Cricket playing ability and fitness levels of the Cricketers. The field training packages designed by the investigator was administered for a period of twelve weeks, five days a week, two sessions each day each session lasted 90 minutes. The Yogic practices were meted out for 45minutes to group II either before or after the field training. The yogic practice includes selected asanas, pranayamas and meditation techniques. The selected variables for the present study are Physical Fitness variables namely speed, endurance, explosive strength and flexibility; The data was collected before and after the experimental treatment. Analysis of covariance (ANCOVA) was used to analyze the collected data. Scheffe's test was followed as a post-hoc test to determine the level of significant difference between the paired means. From the analysis of the data, the following conclusions were drawn; the control group had not shown significant changes in any of the selected variables. The field training with and without yogic practice group had shown significant improvement in all the selected physical fitness variables among Cricket players. However the significant difference was observed only on flexibility Cricket playing ability.

Keywords: speed, strength, flexibility cricket playing ability

Introduction

Cricket is basically a bat and ball game played between two teams of eleven players. It is one of the oldest sports in the world and has its origin in 16th century in England. The word "Training" means different things in different fields. In sports the word "Training" is generally understood to be synonym of doing exercise. In a narrow sense training is physical exercise for the improvement of performance. Training involves constructing an exercise programme to develop an athlete for a particular event. This increasing skill and energy capacities are equal consideration (Singh, 1991).

Physical fitness and cricket performance

Kapil Dev started training at a very young age and he firmly believes that it is complete physical fitness that has contributed to his overall success in all aspects of the game-bowling. He contends that physical fitness achieved during off-season periods helped him in bowling long spells over and over again without fatigue or lapse of concentration. Kapil began his test career in 1978 and only recently amend his plan to retire. A truly remarkable accomplishment! Even as a boy, he would go in for energetic jogging, springing and stretching exercises. Also he would bowl at the nets for as long as possible till the point of exhaustion (Amarnath, 1996)^[4]. Bowlers require both explosive strength and speed, combined with good muscular endurance, in order to be able to maintain a high count of number of overs.

Correspondence
R Ananda Kumar
Ph.D Research Scholar,
Department of Physical
Education S.R.K.V. College of
Arts and Science, Coimbatore,
Tamil Nadu, India

Poor fitness and muscular strength will result in inaccurate bowling and greater risk of injury, especially for high speed bowlers and also allows the batsmen to settle down in the wicket to score more runs. All players will at some time in the game, bat and field. A cricket training programme shall be designed with these as objectives in the mind.

Flexibility is very important for a fast bowler. Dennis Lillee (1984) says "Flexibility is designed to give the bowler full freedom of movement when bowling a full speed, without threatening damage to his muscle".

Methodology

The subjects were divided into three equal groups in which each group consisted of sixteen subjects and named Group-I as field training group, Group-II as field training combined with yogic practice group, Group-III as Control group. The field training package was specifically designed to improve

the Cricket playing ability and fitness levels of the Cricketers. The field training packages designed by the investigator was administered for a period of twelve weeks, five days a week, two sessions each day each session lasted 90 minutes. The Yogic practices were meted out for 45minutes to group II either before or after the field training. The yogic practice includes selected asanas, pranayamas and meditation techniques. The selected variables for the present study are Physical Fitness variables namely speed, endurance, explosive strength and flexibility; the data was collected before and after the experimental treatment. Analysis of covariance (ANCOVA) was used to analyze the collected data. Scheffe's test was followed as a post-hoc test to determine the level of significant difference between the paired means.

Results and Discussion

Table 1: Analysis of covariance for the pre, post and adjusted post test on speed of experimental and control groups

Test	Experimental Group-'A' (Seconds)	Experimental Group-'B' (Seconds)	Control Group (Seconds)	Source of variance	Sum of square	df	Mean square	'F' ratio
Pretest	7.0188	7.0050	7.0125	B.M	0.002	2	0.001	
Mean SD(\pm)	0.47348	0.44882	0.52885	W.G	10.580	45	0.235	0.003
Post test	6.5956	6.5669	7.0306	B.M	2.161	2	1.080	
Mean SD(\pm)	0.38965	0.37640	0.52767	W.G	8.579	45	0.191	5.667*
Adjusted Post test Mean	6.591	6.572	7.031	B.S	2.152	2	1.076	
				W.S	2.710	44	0.062	17.474*

B.M. –Between means

W.G. – Within groups

B.S. – Between sets W.S. – Within sets

*Significant at 0.05 level of confidence

(The table values required for significance at 0.05 level of confidence for 2 & 45 and 2 & 44 are 3.20 and 3.21 respectively).

The table - 1 shows that the pre-test mean values on Speed of field training group, field training combined with yogic practice group and control group are 7.0188, 7.0050 and 7.0125 respectively. The obtained 'F' ratio 0.003 for pre-test scores was less than the table value 3.20 for df 2 and 45 required for significance at 0.05 level of confidence on speed. The post-test mean values on speed of field training group, field training combined with yogic practice group and control group are 6.5956, 6.5669 and 7.0306 respectively. The obtained 'F' ratio 5.667 for post-test scores was greater than the table value 3.20 for df 2 and 45 required for significance at 0.05 level of confidence on speed. The adjusted post-test

means of field training group, field training combined with yogic practice group and control group are 6.591, 6.572 and 7.031 respectively. The obtained 'F' ratio of 17.474 for adjusted post-test means was greater than the table value of 3.21 for df 2 and 44 required for significance at 0.05 level of confidence on speed. The results of the study indicated that there was a significant difference among the adjusted post-test means of field training group, field training combined with yogic practice group and control group on speed.

Since the obtained 'F' ratio value was significant further to find out the paired mean difference, the Scheffe's test was employed and presented in table- 2.

Table 2: The scheffe's test for the difference between paired means on speed

Experimental Group-'A' (Field training group)	Experimental Group-'B' (Field training combined with yogic practice)	Control Group	MD	CI
6.591		7.031	0.440*	0.223
	6.572	7.031	0.458*	
6.591	6.572		0.019	

*Significant at 0.05 level of confidence.

The table 2 shows that the mean difference values between field training group and control group; field training combined with yogic practice and control group; field training group and field training combined with yogic practice group are 0.440, 0.458 and 0.019 respectively. When the control group compared with experimental groups, the mean differences were 0.440 and 0.458 which were significant at 0.05 level of confidence. Hence, there was significant difference between control and experimental groups in Speed among Cricketers. However, the mean difference between the

two experimental groups was 0.019 which was not significant at 0.05 level of confidence.

It may be concluded from the results that there was no significant difference between adjusted post means of experimental group 'A' and 'B'. Statistically significant difference existed between the experimental group 'B' and the control group. The results of the study showed that there were a significant difference between field training group and control group; field training combined with yogic practice group and control group on speed.

Table 3: Analysis of covariance for the pre, post and adjusted post test on explosive strength of experimental and control groups

Test	Experimental Group-'A' (in metres)	Experimental Group-'B' (in metres)	Control Group (in metres)	Source of variance	Sum of square	df	Mean square	'F' ratio
Pretest	1.4644	1.4656	1.4613	B.M	0.000	2	0.000	
Mean SD (\pm)	0.08033	0.11472	0.08500	W.G	0.403	45	0.009	0.009
Post test	1.5575	1.5850	1.4775	B.M	0.100	2	0.050	
Mean SD (\pm)	0.06527	0.11069	0.08103	W.G	0.346	45	0.008	6.486*
Adjusted Post test Mean	1.557	1.583	1.480	B.S	0.093	2	0.047	
				W.S	0.066	44	0.001	31.226*

B.M. – Between means

W.G. – Within groups

B.S. – Between sets W.S. – Within sets

*Significant at 0.05 level of confidence.

(The table values required for significance at 0.05 level of confidence for 2 & 45 and 2 & 44 are 3.20 and 3.21 respectively).

The table-3 shows that the pre-test mean values on Explosive strength of field training group, field training combined with yogic practice group and control group are 1.4644, 1.4656 and 1.4613 respectively. The obtained 'F' ratio 0.009 for pre-test scores was less than the table value 3.20 for df 2 and 45 required for significance at 0.05 level of confidence on explosive strength. The post-test mean values on explosive strength of field training group, field training combined with yogic practice group and control group are 1.5575, 1.5850 and 1.4775 respectively. The obtained 'F' ratio 6.486 for post-test scores was greater than the table value 3.20 for df 2 and 45 required for significance at 0.05 level of confidence on explosive strength. The adjusted post-test means of field

training group, field training combined with yogic practice group and control group are 1.557, 1.583 and 1.480 respectively. The obtained 'F' ratio of 31.226 for adjusted post-test means was greater than the table value of 3.21 for df 2 and 44 required for significance at 0.05 level of confidence on explosive strength. The results of the study indicated that there was a significant difference among the adjusted post-test means of field training group, field training combined with yogic practice group and control group on explosive strength. Since the obtained 'F' ratio value was significant further to find out the paired mean difference, the Scheffe's test was employed and presented in table-4.

Table 4: The scheffe's test for the difference between paired means on explosive strength

Experimental Group-'A' (Field training group)	Experimental Group-'B' (Field training combined with yogic practice)	Control Group	MD	CI
1.557		1.480	0.077*	0.028
	1.583	1.480	0.104*	
1.557	1.583		0.026	

*Significant at 0.05 level of confidence.

The table-4 shows that the mean difference values between field training group and control group; field training combined with yogic practice and control group; field training group and field training combined with yogic practice group are 0.077, 0.104 and 0.026 respectively. When the control group compared with experimental groups, the mean differences were 0.077 and 0.104 which were significant at 0.05 level of confidence. Hence, there was significant difference between control and experimental groups in Explosive strength among Cricketers. However, the mean

difference between the two experimental groups was 0.026 which was not significant at 0.05 level of confidence. It may be concluded from the results that there was no significant difference between adjusted post means of experimental groups 'A' and 'B'. Statistically significant difference existed between the experimental groups and the control group. The results of the study showed that there were a significant difference between field training group and control group; field training combined with yogic practice group and control group on explosive strength.

Table 5: Analysis of covariance for the pre, post and adjusted post test on flexibility of experimental and control groups

Test	Experimental Group-'A' (Centimeters)	Experimental Group-'B' (Centimeters)	Control Group (Centimeters)	Source of variance	Sum of square	df	Mean square	'F' ratio
Pretest	16.4375	16.5625	16.5000	B.M	0.125	2	0.063	
Mean SD(\pm)	1.2632	1.4127	1.3662	W.G	81.875	45	1.819	0.034
Post test	21.5625	28.5000	17.0625	B.M	1062.375	2	531.188	
Mean SD(\pm)	1.3149	2.8047	0.9979	W.G	158.875	45	3.531	150.454*
Adjusted Post test Mean	21.5625	28.498	17.063	B.S	1061.270	2	530.635	
				W.S	158.760	44	3.608	147.064*

B.M. –Between means

W.G. – Within groups

B.S. – Between sets W.S. – Within sets

*Significant at 0.05 level of confidence.

(The table values required for significance at 0.05 level of confidence for 2 & 45 and 2 & 44 are 3.20 and 3.21 respectively).

The table-5 shows that the pre-test mean values on Flexibility of field training group, field training combined with yogic practice group and control group are 16.4375, 16.5625 and 16.5000 respectively. The obtained 'F' ratio 0.034 for pre-test scores was less than the table value 3.20 for df 2 and 45 required for significance at 0.05 level of confidence on

flexibility. The post-test mean values on flexibility of field training group, field training combined with yogic practice group and control group are 21.5625, 28.5000 and 17.0625 respectively. The obtained 'F' ratio 150.454 for post-test scores was greater than the table value 3.20 for df 2 and 45 required for significance at 0.05 level of confidence on

flexibility. The adjusted post-test means of field training group, field training combined with yogic practice group and control group are 21.5625, 28.498 and 17.063 respectively. The obtained 'F' ratio of 147.064 for adjusted post-test means was greater than the table value of 3.21 for df 2 and 44 required for significance at 0.05 level of confidence on flexibility. The results of the study indicated that there was a

significant difference among the adjusted post-test means of field training group, field training combined with yogic practice group and control group on flexibility. Since the obtained 'F' ratio value was significant further to find out the paired mean difference, the Scheffe's test was employed and presented in table-6.

Table 6: The scheffe's test for the difference between paired means on flexibility

Experimental Group-'A' (Field training group)	Experimental Group-'B' (Field training combined with yogic practice)	Control Group	MD	CI
21.5625		17.0625	4.4995*	1.67
	28.5000	17.0625	11.435*	
21.5625	28.5000		6.934*	

*Significant at 0.05 level of confidence.

The table - 6 shows that the mean difference values between field training group and control group; field training combined with yogic practice and control group; field training group and field training combined with yogic practice group are 4.4995, 11.435 and 6.934 respectively which are greater than the confidence interval value 1.67 at 0.05 level of confidence. The results of the study showed that there were a significant difference between field training group and control group; field training combined with yogic practice group and

control group; field training group and field training combined with yogic practice group on flexibility.

Performance variable

The analysis of covariance on the subjective rating scores of Cricket playing ability in pre, post and adjusted post test of the experimental group 'A' & 'B' and control group for performance variables have been presented in the table – 7 & 8.

Table 7: Analysis of covariance for the pre, post and adjusted post test on cricket playing ability of experimental and control groups

Test	Experimental Group- 'A' (Scores)	Experimental Group- 'B' (Scores)	Control Group (Scores)	Source of variance	Sum of square	df	Mean square	'F' ratio
Pretest	5.2656	5.2938	5.2313	B.M	0.031	2	0.016	0.016
Mean SD (\pm)	0.97634	1.07856	1.09831	W.G	49.842	45	1.108	
Post test	6.1781	7.5063	5.3063	B.M	39.275	2	19.638	22.291*
Mean SD (\pm)	0.97707	0.78885	1.03245	W.G	39.644	45	0.881	
Adjusted Post test Mean	6.177	7.483	5.331	B.S	28.159	2	14.079	53.668*
				W.S	11.543	44	.262	

B.M. – Between means W.G. – Within groups B.S. – Between sets W.S. – Within sets

*Significant at 0.05 level of confidence.

(The table values required for significance at 0.05 level of confidence for 2 & 45 and 2 & 44 are 3.20 and 3.21 respectively).

The table-7 shows that the pre-test mean values on Cricket playing ability of field training, field training yogic practice and control groups are 5.2656, 5.2938 and 5.2313 respectively. The obtained 'F' ratio 0.016 for pre-test scores was less than the table value 3.20 for df 2 and 45 required for significance at 0.05 level of confidence on self confidence. The post-test mean values on self confidence of field training, field training yogic practice and control groups are 6.1781, 7.5063 and 5.3063 respectively. The obtained 'F' ratio 22.291 for post-test scores was greater than the table value 3.20 for df 2 and 45 required for significance at 0.05 level of confidence on self confidence. The adjusted post-test means of field

training, field training yogic practice and control groups are 6.177, 7.483 and 5.331 respectively. The obtained 'F' ratio of 53.668 for adjusted post-test means was greater than the table value of 3.21 for df 2 and 44 required for significance at 0.05 level of confidence on self confidence. The results of the study indicated that there was a significant difference among the adjusted post-test means of field training, field training yogic practice and control groups on Cricket playing ability. Since the obtained 'F' ratio value was significant further to find out the paired mean difference, the Scheffe's test was employed and presented in table-8.

Table 8: The scheffe's test for the difference between paired means on cricket playing ability

Experimental Group-'A' (Field training group)	Experimental Group-'B' (Field training combined with yogic practice)	Control Group	MD	CI
6.177		5.331	0.845*	0.458
	7.483	5.331	2.152*	
6.177	7.483		1.306*	

*Significant at 0.05 level of confidence.

The table-8 shows that the mean difference values between field training group and control group; field training combined with yogic practice and control group; field training group and field training combined with yogic practice group are 0.845, 2.152 and 1.306 respectively which are greater than the confidence interval value 0.458 at 0.05 level of

confidence. The results of the study showed that there were a significant difference between field training group and control group; field training combined with yogic practice group and control group; field training group and field training combined with yogic practice group on Cricket playing ability.

Discussion on findings

The results of the study indicated that the experimental groups namely field training and field training combined with yogic practice had significantly influenced on the performance of the selected variables such as speed, explosive strength, flexibility and Cricket playing ability as both experimental groups had undergone systematic training over 12 weeks duration. The control group had not shown significant improvement on any of the selected variables as they have not subjected to any of the specific training / conditioning similar to that of experimental groups. Hence it is understood that the selected training means had influenced on the criterion variables.

Physical fitness components

The result of the study indicate that the field training with and without yogic practice showed significant improvement on performance level in all the selected physical fitness components when compared with control group. Hence, twelve weeks training with and without yogic practices showed considerable improvement in speed, explosive strength and flexibility among Cricket players in experimental groups. At the same time when the two experimental groups were compared, the field training with yogic practice group showed significant improvement in flexibility than the other variables. Only marginal improvement was observed in speed and explosive strength with no statistical significance. So, the effect of twelve week field training with yogic practice was much greater than that of field training among Cricketers.

Conclusions

From the analysis of the data, the following conclusions were drawn,

1. The control group had not shown significant changes in any of the selected variables.
2. The field training with and without yogic practice group had shown significant improvement in all the selected physical fitness variables among Cricket players.
3. The field training with and without yogic practice group had shown a significant improvement in all the selected performance variables among the Cricket players.
4. The field training combined with yogic practice group was better than the field training group on all selected parameters among the Cricket players. However the significant difference was observed only on flexibility.

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