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Isolated and Combined Effect of Parcourse and Swissball Training on Selected Performance Variables among Football Players of Periyar University Affiliated Colleges

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Abstract

The purpose of the study was to find out the isolated and combined effect of parcourse and swissball training on selected performance variables among football players of Periyar University affiliated colleges. To achieve the purpose of the present study, eighty football players from affiliated colleges of Periyar University, Salem, Tamilnadu, India were selected as subjects at random and their ages ranged from 18 to 25 years. The subjects were divided into four equal groups of twenty each. Group I acted as Experimental Group I (Parcourse Training), Group II acted as Experimental Group II (Swissball Training), Group III acted as Experimental Group III (Combined Parcourse & Swissball Training) Group IV acted as Control Group. The requirement of the experiment procedures, testing as well as exercise schedule was explained to the subjects so as to get full co-operation of the effort required on their part and prior to the administration of the study. The study was formulated as a true random group design, consisting of a pre-test and post-test. Pre test was conducted for all the subjects on selected performance variables. This initial test scores formed as pre test scores of the subjects. Experimental Group I was exposed to parcourse training, Experimental Group II was exposed to swissball training, Experimental Group III was exposed to combined parcourse & swissball training and Control Group was not exposed to any experimental training other than their regular daily activities. The duration of experimental period was 12 weeks. After the experimental treatment, all eighty subjects were tested on their performance variables. This final test scores formed as post test scores of the subjects. The pre test and post test scores were subjected to statistical analysis using Analysis of Covariance (ANCOVA) to find out the significance among the mean differences, whenever the 'F' ratio for adjusted test was found to be significant; Scheffe's post hoc test was used. In all cases 0.05 level of confidence was fixed to test hypotheses. The combined parcourse & swissball training group had shown better improvement on performance variables among the football players than the other groups.

Keywords: Parcourse, Football, Swissball, Training.

Introduction

Training is a programme of exercises designed to improve the skills and increase an athlete's capacity of an enery for a particular event. In sports, the word 'training' is generally understood to be a synonym for doing physical exercise. In a narrow sense, training is doing physical exercises for the improvement of performance or general fitness (Raghavan, 2004). Parcourse is a fitness trial and it consists of a course equipped with obstacles or stations distributed along its length for exercising the human body to promote good health. The course is designed to promote physical fitness training in the style attributed to Georges Hebert. In general, fitness trails can be natural or manmade, located in areas such as forest, transportation rights of way, parks and urban settings. Equipment exists to provide specific forms of physiological exercise, and can consist of natural features including climbable rocks, trees, river embankments; manufactured products like stepping post, chin up, climbing designed to provide similar physical challenges. The degree of difficulty of a course is determined by terrain slope, trail surface obstacle height, length and other features (Rex, 1985).

The concept of ball exercises was imported from Europe to America by Joanne Posner Mayer in the late '80s. She was the first to really promote the use of ball exercises in the fitness industry specifically. Since then, exercise balls have quickly made their way into commercial gyms throughout the country and into personal gyms up to the point, where they have established themselves as mainstays in the fitness industry. As of today, countless fitness professionals are promoting the use of ball exercises and an athletes from every sport imaginable and from every level are incorporating them into their training regimen. Now, exercise balls come in a variety of different sizes and are often used alongside other fitness equipment. For

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example, in order to reduce the range of motions allowed by the exercise ball, you can use what is known as a stability cushion that you would position underneath the ball in order to cradle it in place. Furthermore, new ball exercises as constantly being developed that incorporate the use of dumbbells or cable systems. However, proper training intensity is difficult to obtain during Swiss ball exercises whereas strengthening exercises on machines usually are performed to induce high level of muscle activation.

Football is played in accordance with a set of rules known as the Laws of the Game. The game is played using a single round ball (the football). Two teams of eleven players each compete to get the ball into the other team's goal, thereby scoring a goal. The team that has scored more goals at the end of the game is the winner; if both teams have scored an equal number of goals then the game will end with draw. The primary rule is that players may not deliberately handle the ball other than goalkeepers with their hands or arms during play. Although players usually use their feet to move the ball around, they may use any part of their bodies other than their hands or arms (Morris, 1981).

Methodology

The purpose of the study was to find out the isolated and combined effect of parcourse and swissball training on selected performance variables among football players of Periyar University affiliated colleges. To achieve the purpose of the present study, eighty football players from affiliated colleges of Periyar University, Salem, Tamilnadu, India were selected as subjects at random and their ages ranged from 18 to 25 years. The subjects were divided into four equal groups of twenty each. Group I acted as Experimental Group I (Parcourse Training), Group II acted as Experimental Group II (Swissball Training), Group III acted as Experimental Group III (Combined Parcourse & Swissball Training) Group IV acted as Control Group. The requirement of the experiment procedures, testing as well as exercise schedule was explained to the subjects so as to get full co-operation of the effort required on their part and prior to the administration of the study. The study was formulated as a true random group design, consisting of a pre-test and post-test. Pre test was conducted for all the subjects on selected performance variables. This initial test scores formed as pre test scores of the subjects. Experimental Group I was exposed to parcourse training, Experimental Group II was exposed to swissball training, Experimental Group III was exposed to combined parcourse & swissball training and Control Group was not exposed to any experimental training other than their regular daily activities. The duration of experimental period was 12 weeks. After the experimental treatment, all eighty subjects were tested on their performance variables. This final test scores formed as post test scores of the subjects. The pre test and post test scores were subjected to statistical analysis using Analysis of Covariance (ANCOVA) to find out the significance among the mean differences, whenever the 'F' ratio for adjusted test was found to be significant; Scheffe's post hoc test was used. In all cases 0.05 level of confidence was fixed to test hypotheses.

Results

Table I. Computation of analysis of covariance of parcourse training swissball training combined parcourse & swissball training and control groups on kicking

	PTG	SBTG	CPSBTG	CG	Source of Variance	Sum of Squares	df	Means Squares	F-ratio
Pre-Test Means	22.40	22.10	21.30	22.25	**BG**	14.43	3	4.81	1.55
					WG	234.55	76	3.08	
Post-Test Means	30.70	30.00	29.80	22.70	**BG**	845.20	3	281.73	94.07*
					WG	227.60	76	2.99	
Adjusted Post-Test Means	30.72	30.00	29.76	22.71	**BG**	839.70	3	279.90	92.52*
					WG	226.89	75	3.02	

An examination of table - I indicated that the pre test means of parcourse training, swissball training, combined parcourse & swissball training and control groups were 22.40, 22.10, 21.30 and 22.25 respectively. The obtained F-ratio for the pre-test was 1.55 and the table F-ratio was 2.72. Hence the pre-test mean F-ratio was insignificant at 0.05 level of confidence for the degree of freedom 3 and 76. This proved that there were no significant difference between the experimental and control groups indicating, that the process of randomization of the groups was perfect while assigning the subjects to groups. The post-test means of the parcourse training, swissball training, combined parcourse & swissball training and control groups were 30.70, 30.00, 29.80 and 22.70 respectively. The obtained F-ratio for the post-test was 94.07 and the table F-ratio was 2.72. Hence the post-test mean F-ratio was significant at 0.05 level of confidence for the degree of

freedom 3 and 76. This proved that the differences between the post-test means of the subjects were significant. The adjusted post-test means of the parcourse training, swissball training, combined parcourse & swissball training and control groups were 30.72, 30.00, 29.76 and 22.71 respectively. The obtained F-ratio for the adjusted post-test means was 92.52 and the table F-ratio was 2.72. Hence the adjusted post-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 3 and 75. This proved that there was a significant difference among the means due to the experimental trainings on kicking. Since significant differences were recorded, the results were subjected to post hoc analysis using Scheffe's post hoc test. The results were presented in Table-II.

Table II. The scheffe's test for the differences between the adjusted post-test means on kicking

Adjusted Post-Test Means				Mean Difference	Confidence Interval
PTG	SBTG	CPSBTG	CG		
30.72	30.00	---	---	0.72	1.56
30.72	---	29.76	---	0.96	
30.72	---	---	22.72	8.00*	
---	30.00	29.76	---	0.24	
---	30.00	---	22.72	7.28*	
---	---	29.76	22.72	7.04*	

**** Significant at 0.05 level of confidence***

The multiple comparisons showed in Table II proved that there existed significant differences between the adjusted means of parcourse training with control group (8.00), swissball training with control group (7.28) and combined parcourse & swissball training with control group (7.04). There was no significant difference between parcourse training and swissball training group (0.72), combined parcourse & swissball training and parcourse training group (0.96) and combined parcourse & swissball training and swissball training group (0.24) at 0.05 level of confidence with the confidence interval value of 1.56. The pre, post and adjusted means on kicking were presented through bar diagram for better understanding of the results of this study in Figure-I.

Figure I. Pre post and adjusted post-test differences of the, parcourse training swissball training combined parcourse & swissball training and control groups on kicking

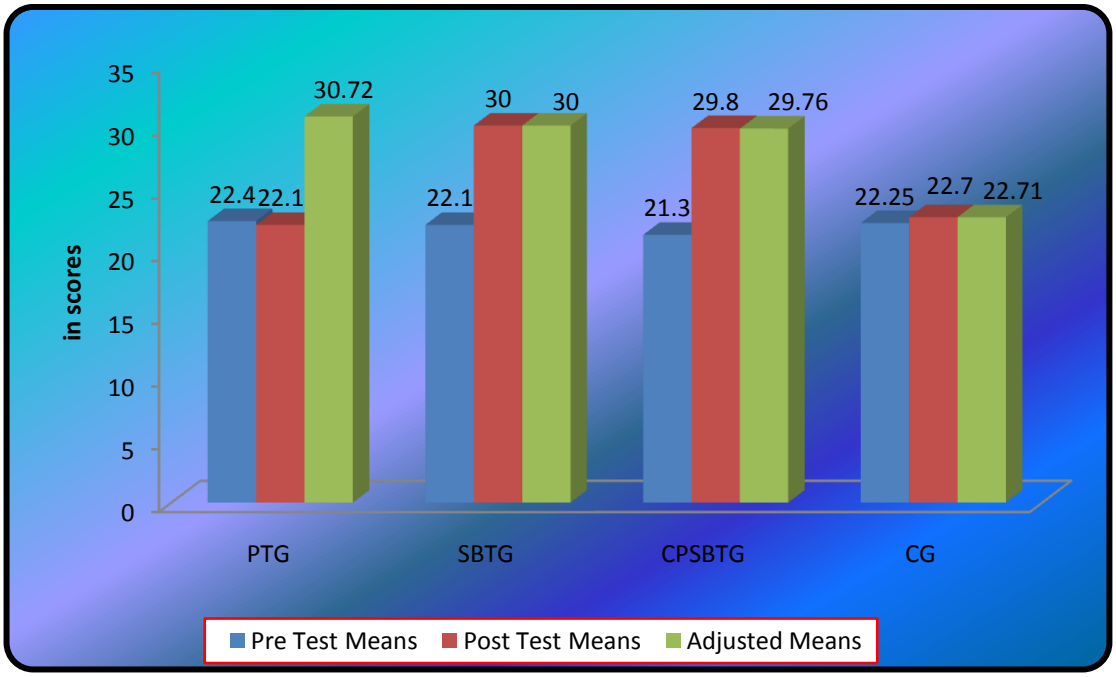


Table III. Computation of analysis of covariance of parcourse training swissball training combined parcourse & swissball training and control groups on dribbling

	PTG	SBTG	CPSBTG	CG	Source of Variance	Sum of Squares	df	Means Squares	F-ratio
Pre-Test Means	19.21	19.24	19.04	19.56	**BG**	2.85	3	0.95	0.32
					WG	219.84	76	2.89	
Post-Test Means	17.98	17.90	17.63	19.55	**BG**	45.60	3	15.20	7.41*
					WG	155.76	76	2.04	
Adjusted Post-Test Means	17.98	17.90	17.64	19.54	**BG**	43.95	3	14.65	7.08*
					WG	155.19	75	2.06	

An examination of table - III indicated that the pre test means of parcourse training, swissball training, combined parcourse & swissball training and control groups were 19.21, 19.24, 19.04 and 19.56 respectively. The obtained F-ratio for the pre-test was 0.32 and the table F-ratio was 2.72. Hence the pre-test mean F-ratio was insignificant at 0.05 level of confidence for the degree of freedom 3 and 76. This proved that there were no significant difference between the experimental and control groups indicating, that the process of randomization of the groups was perfect while assigning the subjects to groups. The post-test means of the parcourse training, swissball training, combined parcourse & swissball training and control groups were 17.98, 17.90, 17.63 and 19.55 respectively. The obtained F-ratio for the post-test was 7.41 and the table F-ratio was 2.72. Hence the post-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 3 and 76. This proved that the differences between the post-test means of the subjects were significant. The adjusted post-test means of the parcourse training, swissball training, combined parcourse & swissball training and control groups were 17.98, 17.90, 17.64 and 19.54 respectively. The obtained F-ratio for the adjusted post-test means was 7.08 and the table F-ratio was 2.72. Hence the adjusted post-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 3 and 75. This proved that there was a significant difference among the means due to the experimental trainings on dribbling. Since significant differences were recorded, the results were subjected to post hoc analysis using Scheffe's post hoc test. The results were presented in Table-IV.

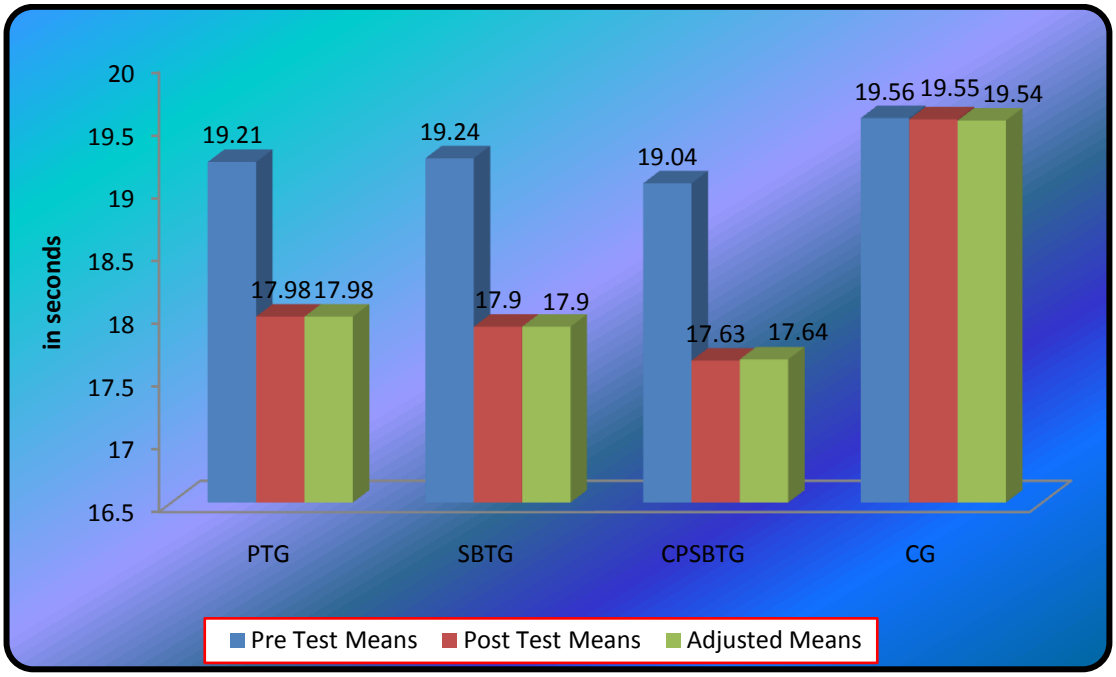
Table IV. The scheffe's test for the differences between the adjusted post-test means on dribbling

Adjusted Post-Test Means				Mean Difference	Confidence Interval
PTG	**SBTG**	**CPSBTG**	**CG**		
17.98	17.90	---	---	0.08	1.29
17.98	---	17.64	---	0.34	
17.98	---	---	19.54	1.56*	
---	17.90	17.64	---	0.26	
---	17.90	---	19.54	1.64*	
---	---	17.64	19.54	1.90*	

**** Significant at 0.05 level of confidence***

The multiple comparisons showed in Table IV proved that there existed significant differences between the adjusted means of parcourse training with control group (1.56), swissball training with control group (1.64) and combined parcourse & swissball training with control group (1.90). There was no significant difference between parcourse training and swissball training group (0.08), combined parcourse & swissball training and parcourse training group (0.34) and combined parcourse & swissball training and swissball training group (0.26) at 0.05 level of confidence with the confidence interval value of 1.29. The pre, post and adjusted means on dribbling were presented through bar diagram for better understanding of the results of this study in Figure-II.

Figure II. Pre post and adjusted post-test differences of the, parcourse training swissball training combined parcourse & swissball training and control groups on dribbling



Conclusion

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

1. The parcourse training group had shown significant improvement in all the selected performance variables among football players after undergoing parcourse training group for a period of twelve weeks.
2. The swissball training group had shown significant improvement in all the selected performance variables among football players after undergoing the swissball training group for a period of twelve weeks.
3. The combined parcourse & swissball training group had shown better improvement on performance variables among the football players than the other groups.

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