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Effect of Swissball Training on Selected Physical Variables among Inter-collegiate Male Hockey Players

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Abstract

The purpose of the study was to investigate the effect of swissball training on selected physical variables among inter-collegiate male hockey players. It was hypothesized that there would be significant differences on selected physical variables due to the effect of swissball among inter-collegiate male hockey players. For the present study the 36 male intercollegiate level players were selected as subjects at random from affiliated colleges of Bharathidasan University, Tiruchirappalli, Tamilnadu, India and their ages ranged from 18 to 25 years. For the present study pre test – post test random group design which consists of control group and experimental group was used. The subjects were randomly assigned to two equal groups of eighteen each and named as Group 'A' and Group 'B'. Group 'A' underwent swissball training and Group 'B' have not underwent any training. Speed was assessed by 50 metre dash and agility was assessed by shuttle run. The data was collected before and after twelve weeks of training. The data was analyzed by applying Analysis of Co-Variance (ANCOVA). The level of significance was set at 0.05. The swissball training had positive impact on speed and agility among inter-collegiate male hockey players.

Keywords: Swissball, Speed, Agility, Hockey.

Introduction

Swissball is a ball which is filled with air and it has a mobile platform which gives bouncy effect to the body there by the body should align and maintain balance while performing exercise. The concept of ball exercises was imported to America from Europe 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 athletes from every sport imaginable and from every level are incorporating them into their training regimen. Exercise balls now come in a variety of different sizes and are often used alongside other fitness equipment. For 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 (Milligan, 2005).

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Methodology

The purpose of the study was to investigate the effect of swissball training on selected physical variables among inter-collegiate male hockey players. It was hypothesized that there would be significant differences on selected physical variables due to the effect of swissball among inter-collegiate male hockey players. For the present study the 36 male intercollegiate level players were selected as subjects at random from affiliated colleges of Bharathidasan University, Tiruchirappalli, Tamilnadu, India and their ages ranged from 18 to 25 years. For the present study pre test – post test random group design which consists of control group and experimental group was used. The subjects were randomly assigned to two equal groups of eighteen each and named as Group 'A' and Group 'B'. Group 'A' underwent swissball training and Group 'B' have not underwent any training. Speed was assessed by 50 metre dash and agility was assessed by shuttle run. The data was collected before and after twelve weeks of training. The data was analyzed by applying Analysis of Co-Variance (ANCOVA). The level of significance was set at 0.05.

Results

The findings pertaining to analysis of co-variance between experimental group and control group on selected physical variables among inter-collegiate male hockey players for pre-post test respectively have been presented in table I to II.

Table I. ANCOVA between Experimental Group and Control Group on Speed of Inter-collegiate male hockey players for Pre, Post and Adjusted Test

	Experimental Group	Control Group	Source of Variance	Sum of Squares	df	Mean Square	F
Pre Test Mean	7.76	7.80	BG	0.008	1	0.008	0.769
			WG	0.371	34	0.011	
Post Test Mean	7.19	7.76	BG	3.010	1	3.010	167.489*
			WG	0.611	34	0.018	
Adjusted Post Mean	7.18	7.77	BG	3.029	1	3.029	171.364*
			WG	0.583	33	0.018	

*** Significant at 0.05 level.** **df: 1/33= 4.13**

Table I revealed that the obtained 'F' value of 171.364 was found to be significant at 0.05 level with df 1, 33 as the tabulated value of 4.13 required to be significant at 0.05 level. The same table indicated that there was a significant difference in adjusted means of speed of inter-collegiate male hockey players between experimental group and control group. The graphical representation of data has been presented in figure I.

Figure I. Comparisons of Pre – Test Means Post – Test Means and Adjusted Post – Test Means for Control group and Experimental Group in relation to Speed

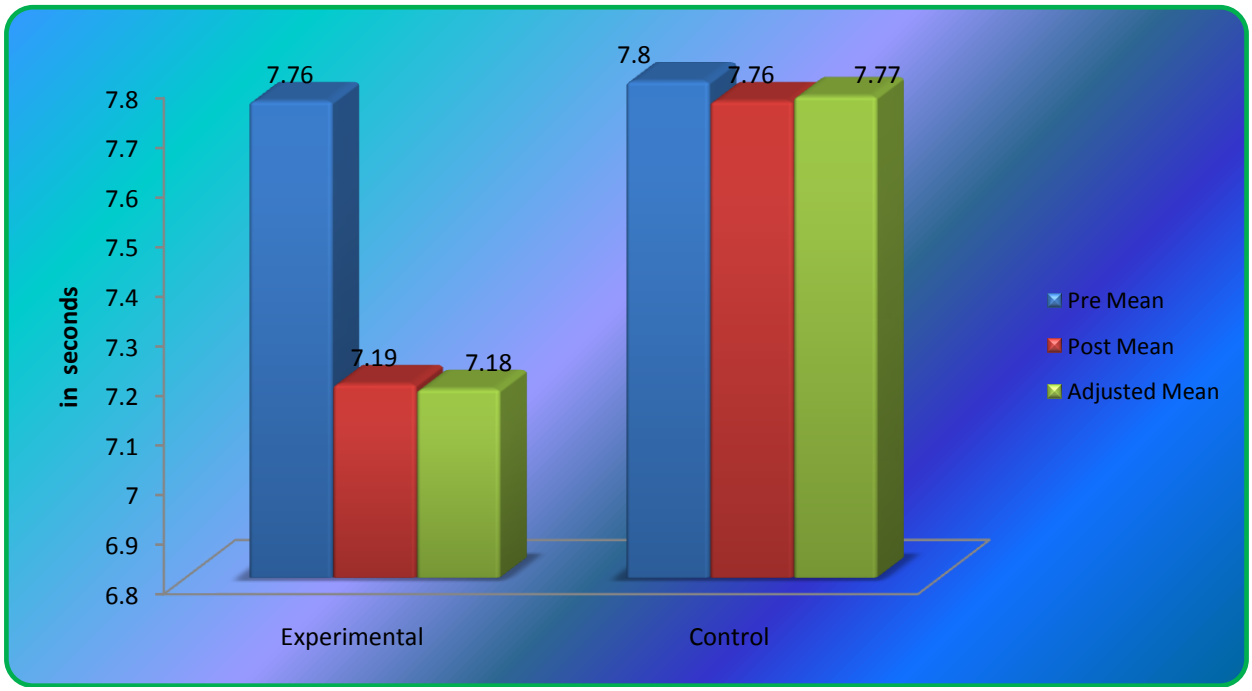


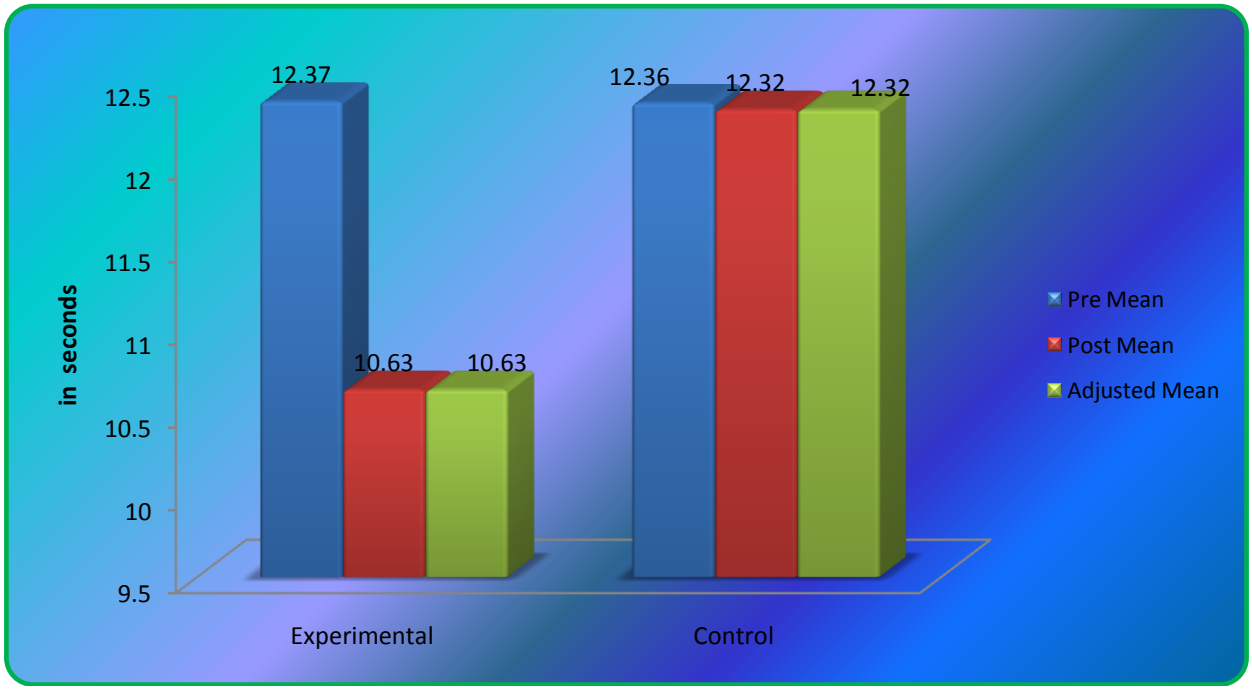
Table II. ANCOVA between Experimental Group and Control Group on Agility of Inter-collegiate male hockey players for Pre, Post and Adjusted Test

	Experimental Group	Control Group	Source of Variance	Sum of Squares	df	Mean Square	F
Pre Test Mean	12.37	12.36	BG	0.001	1	0.001	0.025
			WG	1.971	34	0.058	
Post Test Mean	10.63	12.32	BG	25.874	1	25.874	714.453*
			WG	1.231	34	0.036	
Adjusted Post Mean	10.63	12.32	BG	25.826	1	25.826	698.368*
			WG	1.220	33	0.037	

*** Significant at 0.05 level.** **df: 1/33= 4.13**

Table II revealed that the obtained 'F' value of 698.368 was found to be significant at 0.05 level with df 1, 33 as the tabulated value of 4.13 required to be significant at 0.05 level. The same table indicated that there was a significant difference in adjusted means of agility of inter-collegiate male hockey players between experimental group and control group. The graphical representation of data has been presented in figure II.

Figure II. Comparisons of Pre – Test Means Post – Test Means and Adjusted Post – Test Means for Control group and Experimental Group in relation to Agility



In case of physical variables i.e. speed and agility the results between pre and post (12 weeks) test has been found significantly higher in experimental group in comparison to control group. This is possible because due to regular swissball training which may also bring sudden spurt in physical variables in inter-collegiate male hockey players. The findings of the present study have strongly indicates that swissball training of twelve weeks have significant effect on selected physical variables i.e., speed and agility of inter-collegiate male hockey players. Hence the hypothesis earlier set that swissball training programme would have been significant effect on selected physical variables in light of the same the hypothesis was accepted.

Conclusions

On the basis of findings and within the limitations of the study the following conclusions were drawn:

1. The swissball training had positive impact on speed and agility among inter-collegiate male hockey players.

2. The experimental group showed better improvement on speed and agility among inter-collegiate male hockey players than the control group.

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