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Effect of Swissball Training on Bio-Chemical Variables among Badminton Players

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Abstract

The purpose of the study was to find out the effect of swissball training on bio-chemical variables among badminton players. To achieve the purpose of the present study, thirty badminton players from Trivendrum, Kerala, India were selected as subjects at random and their ages ranged from 18 to 25 years. The subjects were divided into two equal groups of fifteen badminton players each. The study was formulated as a true random group design, consisting of a pre-test and post-test. The groups were assigned as swissball training and control group in an equivalent manner. The experimental group participated the training for a period of twelve weeks to find out the outcome of the training packages and the control group did not participated in any training programme. Paired 't' test was applied. In all cases 0.05 level of confidence was fixed to test hypotheses. The swissball training group had shown significant improvement in all the selected bio-chemical variables among badminton players after undergoing swissball training group for a period of twelve weeks.

Keywords: Swissball Training, Bio-Chemical Variables, Badminton players.

Introduction

Sport is probably as old as humanity itself. It is an institution, which has its own traditions and values. Being an institutionalized and competitive activity, it involves vigorous physical exertion and the use of relatively complex physical skills by individuals whose participation is motivated by a combination of intrinsic satisfaction. It associated with the activity itself and external rewards earned through participation. The world has realized the importance of sports for modern civilization. The main objective of physical education is to promote physical fitness, which would promote health and happiness. Sports performance is indeed an aspect of complex human performance, which has several dimensions. Hence several disciplines of sports science are required to work in a coordinated manner to explore the nature and the process of improving sports performance. 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.

The concept of ball exercises was imported from Europe to America by Joanne Posner Mayer in the late 1980s (Miligan, 2005). 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 athlete 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 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.

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Methodology

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post-test. The groups were assigned as swissball training and control group in an equivalent manner. The experimental group participated the training for a period of twelve weeks to find out the outcome of the training packages and the control group did not participated in any training programme. Paired 't' test was applied. In all cases 0.05 level of confidence was fixed to test hypotheses.

Table I. Variables and Test Items

S.No	Variables	Tests
1	LDL	Lab Test
2	HDL	Lab Test

Results

Table II. Significance of Mean Gains & Losses between Pre and Post Test Scores on Selected Variables of Swissball Training Group (SBTG)

S.No	Variables	Pre-Test Mean	Post-Test Mean	Mean difference	Std. Dev (±)	σ DM	't' Ratio
1	LDL	113.93	99.40	14.53	2.74	0.70	20.28*
2	HDL	50.73	63.00	12.26	3.30	0.85	14.17*

* Significant at 0.05 level

Table II shows the obtained 't' ratios for pre and post test mean difference in the selected variable of LDL (20.28) and HDL (14.17). The obtained ratios when compared with the table value of 2.14 of the degrees of freedom (1, 14) it was found to be statistically significant at 0.05 level of confidence. It was observed that the means gain and losses made from pre to post test were significantly improved in bio-chemical variables of LDL (14.53, $p<0.05$) and HDL (12.26, $p<0.05$).

Figure I. Shows the Pre and Post Mean Values of Experimental Group on Selected Variables

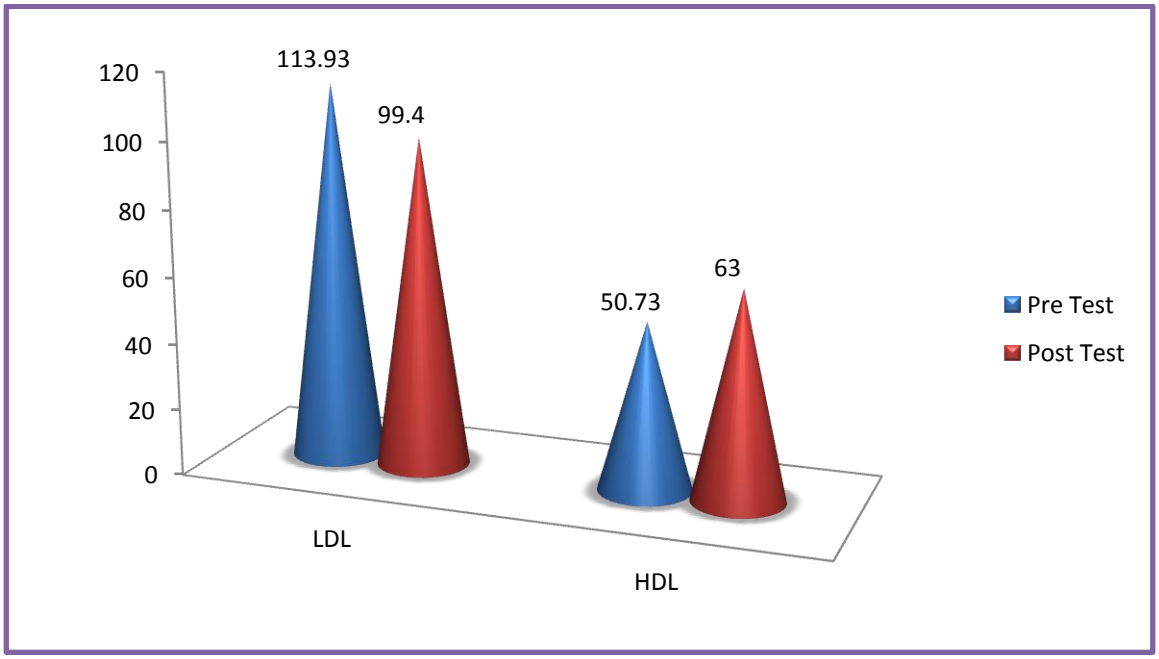


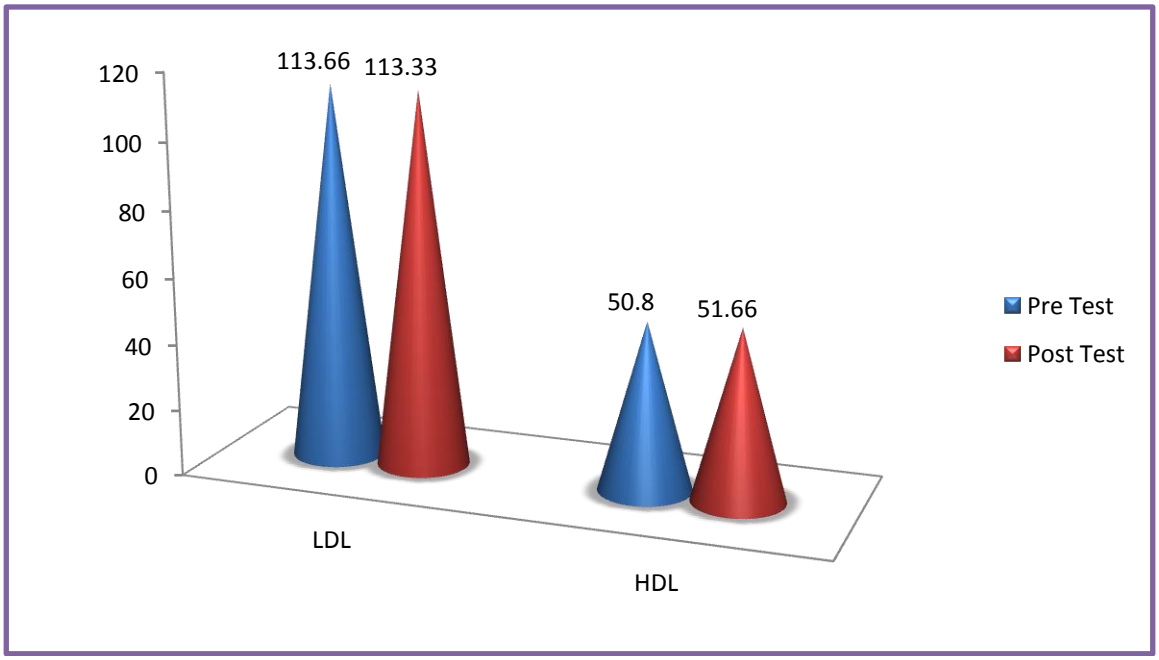
Table III. Significance of Mean Gains & Losses between Pre and Post Test Scores on Selected Variables of Control Group (CG)

S.No	Variables	Pre-Test Mean	Post-Test Mean	Mean difference	Std. Dev (±)	σ DM	't' Ratio
1	LDL	113.66	113.33	0.33	2.05	0.53	0.61
2	HDL	50.80	51.66	0.86	1.92	0.49	1.70

* Significant at 0.05 level

Table III shows the obtained 't' ratios for pre and post test mean difference in the selected variable of LDL (0.61) and HDL (1.70). The obtained ratios when compared with the table value of 2.14 of the degrees of freedom (1, 14) it was found to be statistically insignificant at 0.05 level of confidence. It was observed that the means gain and losses made from pre to post test were not significantly improved in bio-chemical variables of LDL (033, p>0.05) and HDL (0.86, p>0.05).

Figure II. Shows the Pre and Post Mean Values of Contol Group on Selected Variables



Conclusions

From the analysis of the data, the following conclusion was drawn:

1. The swissball training group had shown significant improvement in all the selected bio-chemical variables among badminton players after undergoing swissball training group for a period of twelve weeks.

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