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RESEARCH ARTICLE

EFFECT OF CORE BOARD TRAINING AND SLIDE BOARD FUNCTIONAL TRAINING ON PERFORMANCE OF SELECTED BIOMOTOR

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ABSTRACT

There is a specific response to the specific nature of a training load. This specific response will tend to emphasize one or more of the abilities that make up fitness. These abilities are basic and respond well to training. Each exercise in training tends to develop a particular biomotor ability. The game, tennis, requires high level of speed, agility, coordination and endurance. Different training methods are being adopted by tennis players to improve their biomotor abilities. The researcher is interested to find out the effect of core board and slide board training on performance of selected biomotor abilities of tennis players. The subjects, male tennis players (N=45), from the different colleges of Chennai were randomly selected as subjects and their age ranged between 19-23 years. They were divided into three groups namely core training group, slide board training group, and control group on random basis. Pre test was conducted for all the 45 subjects on selected biomotor abilities. The experimental groups participated in respective training for a period of six weeks. The control group did not participate in any of the training programme. The post test was conducted on the above said dependent variables after a period of six weeks for all the three groups. The obtained data were subjected statistical analysis using ANOVA. The results proved the experimental groups proved that core board and slide board exercises were significantly better than control group in improving speed, coordination and endurance comparing control group. It was concluded that core board training and slide board training can be used for improving of specific biomotor abilities of tennis players.

INTRODUCTION

Sports training is pedagogical process, based on scientific principles, aiming at preparing sportsman for higher performances in sports competitions (Hardyal Singh, 1993). The athlete obviously has greater fitness than the non-athlete because of the training for a chosen event or events. But what is fitness made up from? The law of specificity states

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that there is a specific response to the specific nature of a training load. This specific response will tend to emphasise one or more of the abilities that make up fitness. These abilities are basic and respond well to training. Since these abilities affect how the body moves they are given the name "biomotor abilities" (Uppal, 2004). Each exercise in training tends to develop a particular biomotor ability. For example, when the load of an exercise is maximal it is a strength exercise. Quickness and frequency of movement give a speed exercise. If distance or duration is maximal the exercise becomes endurance based. Exercises that have relatively complex movements are called coordination exercises. This is a simplified view and practice exercises usually develop two or more biomotor abilities. Different events have different demands on fitness. The fitness of the marathon runner is obviously very different to the fitness of the shot putter. To develop the specific fitness required for an event it is necessary for the coach to understand the characteristics of the biomotor abilities and how to develop them. Tennis is a sport played between two players (singles) or between two teams of two players each (doubles). Each player uses a strung racquet to strike a hollow rubber ball covered with felt over a net into the opponent's court. The game requires high level of speed, agility, coordination and endurance. Different training methods are being adopted by tennis players to improve their biomotor abilities speed, agility, coordination and endurance. The researcher is interested to find out the effect of core board and slide board training on performance of selected biomotor abilities of tennis players.

Behm *et al. (*2010) reported that training of the trunk or core muscles for enhanced health, rehabilitation, and athletic performance has received renewed emphasis. It was found that instability resistance exercises can play an important role in periodization and rehabilitation, and as alternative exercises for the recreationally active individual with less interest or access to ground-based free-weight exercises. It was concluded a particular sport may necessitate fewer repetitions. Lust *et al*. (2009) determined the extent to which throwing accuracy, core stability, and proprioception improved after completion of a 6-week training programme. Willardson (2007) documented that in recent years, fitness practitioners have increasingly recommended core stability exercises in sports conditioning programs. Greater core stability may benefit sports performance by providing a foundation for greater force production in the upper and lower extremities and found that balance board and stability disc exercises, performed in conjunction with plyometric exercises, are recommended to improve proprioceptive and reactive capabilities, which may reduce the likelihood of lower extremity injuries.
The purpose of this research is to find out the effect of core training exercises and slide board exercises on selected biomotor abilities of tennis players.

METERIALS AND METHODS

The study was formulated as a true random group design consisting of a pre-test and post test. The subjects, male tennis players (N=45) from the different colleges of Chennai were randomly selected as subjects and their age ranged between 19-23 years. They were divided into three groups namely core training group, slide board training group, and control group on random basis. Pre test was conducted for all the 45 subjects on selected biomotor abilities, speed, agility, coordination and endurance. The experimental groups participated in respective training for a period of six weeks. The control group did not participated in any of the training programme. The post test was conducted on the above said dependent variables after a period of six weeks for all the three groups. The obtained data were subjected statistical analysis using ANOVA.

RESULTS

The obtained results proved that six weeks core board exercises and slide board exercises have been significantly influenced speed, coordination and endurance as the obtained F values 29.97, 62.02 and 12.79 on adjusted post test means were greater than the required F value of 3.23 to be significant. The obtained F value of 0.13 on adjusted post test means of agility proved that there was significant improvement due to six weeks core board exercises and slide board exercises as the obtained value was less than the required F value

Table 1. Results on Calculation of Analysis of Covariance

Calculation of Analysis of Covariance on Speed								
	Core Board Group	**Slide Board Group**	**Control Group**	**Source of Variance**	**Sum of Squares**	**df**	**Mean Squares**	**Obtained F**
Pre Test Mean	7.09	7.11	7.13	Between	0.0	2	0.00	
Std Dev	0.19	0.16	0.18	Within	1.3	42	0.03	0.15
Post Test Mean	6.90	6.92	7.11	Between	0.4	2	0.20	
Std Dev	0.22	0.16	0.21	Within	1.6	42	0.04	5.14*
Adjusted Post Test Mean	6.92	6.92	7.09	Between	0.3	2	0.15	
				Within	0.2	41	0.00	29.97*
Mean Diff	0.19	0.19	-0.02					
Calculation of Analysis of Covariance on Agility								
Pre Test Mean	10.80	10.53	10.90	Between	1.1	2	0.55	
Std Dev	0.48	0.46	0.42	Within	8.7	42	0.21	2.66
Post Test Mean	10.76	10.49	10.88	Between	1.2	2	0.60	
Std Dev	0.47	0.56	0.40	Within	9.7	42	0.23	2.57
Adjusted Post Test Mean	10.71	10.69	10.73	Between	0.0	2	0.01	
				Within	2.2	41	0.05	0.13
Mean Diff	0.04	0.03	0.02					
Calculation of Analysis of Covariance on Coordination								
Pre Test Mean	22.93	22.79	22.93	Between	0.2	2	0.10	
Std Dev	1.20	1.03	1.03	Within	49.7	42	1.18	0.08
Post Test Mean	22.87	21.16	23.03	Between	32.1	2	16.06	
Std Dev	1.42	1.11	1.30	Within	69.3	42	1.65	9.73*
Adjusted Post Test Mean	22.82	21.26	22.98	Between	26.8	2	13.40	
				Within	10.6	41	0.26	51.94*
Mean Diff	-0.07	-1.63	0.09					
Calculation of Analysis of Covariance on Endurance								
Pre Test Mean	11.93	12.13	12.53	Between	2.8	2	1.40	
Std Dev	2.29	2.19	2.26	Within	212.4	42	5.06	0.28
Post Test Mean	14.73	15.40	13.33	Between	33.4	2	16.69	
Std Dev	2.75	2.19	2.94	Within	293.9	42	7.00	2.39
Adjusted Post Test Mean	15.00	15.47	13.00	Between	51.0	2	25.49	
				Within	81.7	41	1.99	12.79*
Mean Diff.	2.80	3.27	0.80					

Required $F_{(0.05, 2,41)} = 3.23$ *Significant

Table 3. Scheffe's Post Hoc Analysis Results

Post Hoc Analysis for Speed				
Core Board Group	**Slide Board Group**	**Control Group**	**Mean Difference**	**Reqd. C.I**
6.919	6.918		0.001	0.064
6.919		7.091	0.172*	0.064
	6.918	7.091	0.172*	0.064
Post Hoc Analysis for Coordination				
22.82	21.26		1.55*	0.47
22.82		22.98	0.16	0.47
	21.26	22.98	1.71*	0.47
Post Hoc Analysis for Endurance				
15.00	15.47		0.47	1.30
15.00		13.00	2.00*	1.30
	15.47	13.00	2.47*	1.30

*Significant

of 3.23. Since significant results were obtained, the post hoc analysis using using Scheffe' Confidence interval was done.

DISCUSSION

The results (Table 1) proved that there was significant improvement in speed, coordination and endurance among tennis players due to six weeks core board and slide board training and the improvement in agility was not significant. The post hoc analysis (Table 2) proved core board and slide board training groups had improved significantly than control group. The comparisons between the experimental groups, influence of core board and slide board were not significant in speed and endurance. The post hoc analysis on coordination proved that slide board exercises were significantly better than core board exercises and control group. Thus, it was found that slide board exercises while significantly improving biomotor abilities, speed, coordination and endurance among tennis players, core board altered only speed and endurance. Behm *et al.* (2010) who found that the core musculature might respond well to multiple sets with high repetitions (e.g., >15 per set); however, a particular sport may necessitate fewer repetitions. And Lust *et al.* (2009) found core-stability exercises increased throwing accuracy, core stability, and proprioception In this study, the repetitions of core training and slide board training were planned for the improvement of biomotor abilities of tennis players and the findings were in agreement with the findings cited.

CONCLUSIONS

Tennis players can utilize core board training and slide board training for improving of specific biomotor abilities of tennis players.

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