



INFLUENCE OF BULGARIAN BAG TRAINING ON SELECTED STRENGTH PARAMETERS AND PERFORMANCE VARIABLES AMONG VOLLEYBALL PLAYERS

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Abstract

The purpose of the study was to find out the effect of bulgarian bag training on selected physical and performance namely arm strength, leg strength, explosive strength among male volleyball players. To achieve the purpose of the study twenty four male volleyball players have been randomly selected from various colleges in and around salem district in the state of Tamil Nadu, India. The age of subjects were ranged from 18 to 25 years. The subjects had past experience of at least three years in volleyball and only who those represented their respective college teams were taken as subjects. The subjects were randomly assigned into two groups of twelve each, such as experimental and control groups. The experimental group participated in the bulgarian bag training for 3 days a week, one session per day and for 12 weeks each session lasted 45 minutes. The control group maintained their daily routine activities and no special training was given. The subjects of the two groups were tested on selected variables prior and immediately after the training period. The collected data were analyzed statistically through analysis of covariance (ANCOVA) to find out the significance difference, if any between the groups. The 0.05 level of confidence was fixed to test the level of significance difference, if any between groups. The results of the study showed that there was significant differences exist between circular strength training group and control group. And also bulgarian bag training group showed significant improvement on arm strength, leg strength, explosive strength and performance compared to control group.

Key Words: Bulgarian Bag, Arm Strength, Leg Strength, Explosive Strength.

Introduction

The Bulgarian training bag is the ultimate extreme fitness tool for serious Olympic caliber athletes. Tactical/combat athletes and the average person wanting to take their muscle strength and endurance to the next level. With the trend toward functional training exercises that prepare your body for real-life moments the Bulgarian training bag is on the cutting edge. The Bulgarian training bag is truly functional and maximizes your strength, muscular endurance, cardiovascular fitness, mobility, and overall explosiveness. The unique shape of the bag is designed to allow for both upper and lower body training while emphasizing superior grip strength at all times.

The Bulgarian Bag strengthens and increases the muscular endurance of your grip, wrists, arms, shoulders, back, legs, rotational muscles, core musculature, co-ordination, balance, and overall shoulder and joint mobility. The Bulgarian Bag is not a sandbag. Although the Bulgarian Bag happens to be filled with sand, that alone does not make it a "sandbag." The contents of the bag are incidental to the function of the bag. Remember, it is the unique design of the Bulgarian Bag that makes it incredibly functional and versatile.

According to Bulgarian bag personal fitness expert Steve Nave, "The Bulgarian bag is a fitness tool of the next generation." Being a movement based piece of equipment, Nave states, "it incorporates all primal movement patterns that mimic natural movements. What makes the bag unique is that it's one of only a few exercise tools that cover all planes of movement under load. It's a functional training tool that creates power and neurological integration.

The Bulgarian bag was invented by Ivan Ivanov at around 2005. Ivanov, a former Bulgarian Greco-Roman Olympic athlete, was working as a U.S. Olympic Greco-Roman wrestling coach at the Olympic training centre in Marquette, Michigan and was looking for a training tool that would allow his wrestlers to improve explosive actions and dynamic movements involved in pushing, twisting, swinging, pulling, bending, rotating, squatting, lunging, and throwing.

Bulgarian bag breaks the tradition with static resistance devices such as free weights, by using accelerating and deceleration movements to swing and spin the Bag at various angles to athlete's body. This results in the Bulgarian bag's ability to increase overall body strength and agility. The unique design of the Bulgarian bag makes it incredibly functional and versatile.

Methodology

To achieve the purpose of the study twenty four male volleyball players have been randomly selected from various colleges in and around salem district in the state of Tamil Nadu, India. The age of subjects were ranged from 18 to 25 years. The



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Table-I, Criterion Measures

S.No	Criterion measure	Test items	Unit of measurement
1	Arm strength	Dip Strength	1/10th of a second
2	Leg Strength	25 Meters Hopping Test	1/10th of a second
3	explosive strength	vertical jump test	In centimeters
4	Performance	Subjective rating	In points

Table – ii, Descriptive Analysis of Physical and Performance Variables Among Experimental and Control Groups

S.No	Variables	Group	Pre-Test Mean	SD (±)	Post –Test Mean	SD (±)	Adjusted Mean
1	Arm strength	BBTG	27.28	0.22	32.48	0.29	32.56
		CG	27.44	0.30	30.24	1.40	30.17
2	Leg strength	BBTG	4.74	.025	4.52	0.006	4.53
		CG	4.75	0.02	4.70	0.11	4.69
3	Explosive strength	BBTG	54.43	0.30	59.53	0.29	59.58
		CG	54.56	0.30	58.19	1.05	58.13
4	Performance	BBTG	5.92	0.01	6.25	0.02	6.25
		CG	5.91	0.01	6.13	0.15	6.12

BBTG = bulgarian bag training group

CG= Control group

The tables-II the pre, post-test means, standard deviations and adjusted means on physical and performance of male volleyball players were numerical presented. The analysis of covariance on selected variables of control group and bulgarian bag training group is presented in table – III

Table – III, Computation of analysis of covariance on physical and performance variables among male volleyball Players

S.No	Variables	Test	Sum of variance	Sum of squares	Df	Mean square	F ratio
1	Arm strength	Pre-test	B.G.	0.14	1	0.141	1.99
			W.G.	1.55	22	0.071	
		Post-test	B.G.	30.10	1	30.10	29.35*
			W.G.	22.56	22	1.02	
		Adjusted means	B.S.	31.24	1	31.24	30.92*
W.S.	21.21	21	1.01				
2	Leg Strength	Pre-test	B.G.	0.001	1	0.001	0.93
			W.G.	0.01	22	0.001	
		Post-test	B.G.	0.19	1	0.19	29.84*
			W.G.	0.14	22	0.006	
		Adjusted means	B.S.	0.15	1	0.15	27.85*
W.S.	0.12	21	0.006				
3	Explosive strength	Pre-test	B.G.	0.09	1	0.09	1.01
			W.G.	2.01	22	0.09	
		Post-test	B.G.	10.77	1	10.77	18.01*
			W.G.	13.15	22	0.59	



4	Performance	Adjusted means	B.S.	12.05	1	12.05	21.83*
			W.S.	11.59	21	0.55	
		Pre-test	B.G.	0.001	1	0.001	2.89
			W.G.	0.005	22	.000	
		Post-test	B.G.	0.091	1	0.091	7.25*
			W.G.	0.27	22	0.013	
Adjusted means	B.S.	0.093	1	0.093	7.13*		
	W.S.	0.27	21	0.013			

*Significant at 0.05 level of confidences

(The table values required for significance at 0.05 level of confidence for 1 & 22 and 1 & 21 are 4.30 and 4.33 respectively).

In the table the results of analysis of covariance on arm strength, leg strength, explosive strength and performance. The obtained 'F' ratio of 1.99, 0.93, 1.01 and 2.89, for Pre-test means was less than the table value of 4.30 for df 1 and 22 required for significance at 0.05 level of confidence on arm strength, leg strength, explosive strength and performance. The obtained 'F' ratio of 29.35, 29.84, 18.01 and 7.25 for post-test means was greater than the table value of 4.30 for df 1 and 22 required for significance at 0.05 level of confidence on arm strength, leg strength, explosive strength and performance. The obtained 'F' ratio of 30.92, 27.85, 21.83 and 7.13 for adjusted post-test means was greater than the table value of 4.33 for df 1 and 21 required for significance at 0.05 level of confidence on arm strength, leg strength, explosive strength and performance. The result of the study indicated that there was a significant difference among the adjusted post test means of bulgarian bag training group and control group on arm strength, leg strength, explosive strength and performance. And also bulgarian bag training group showed significant improvement on arm strength, leg strength, explosive strength and performance compared to control group.

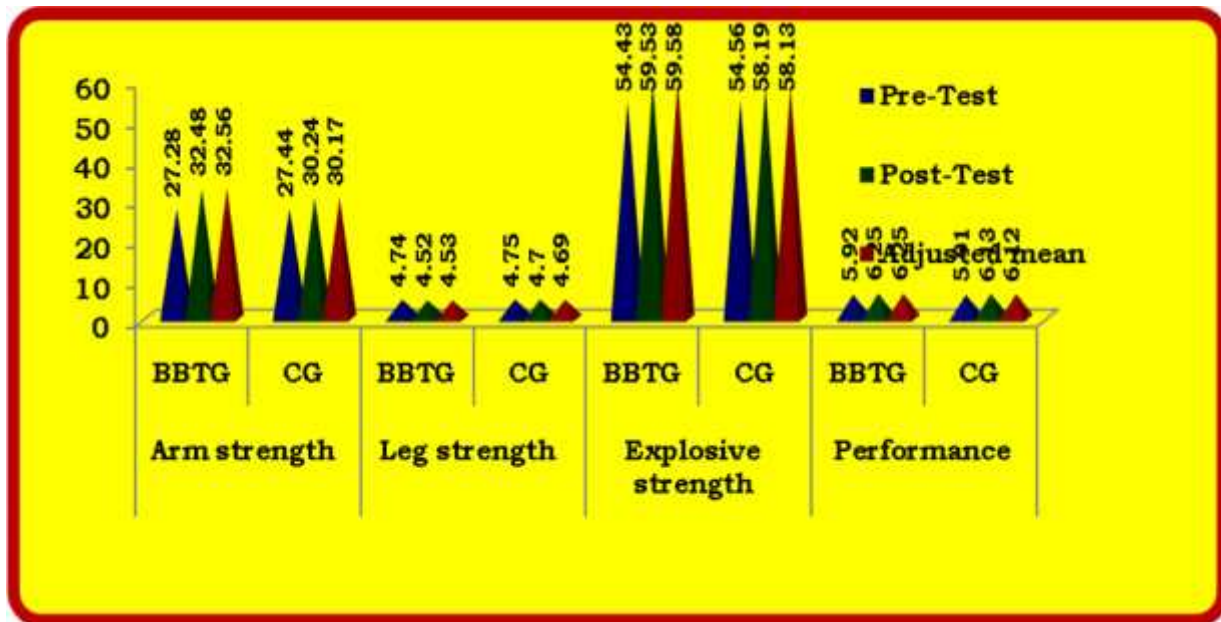


Figure-I The pre, post and adjusted mean values of arm strength, leg strength, explosive strength and performance of both experimental and control groups are graphically represented in the figure-I

Discussion of Findings

The results of the study indicate that the experimental group which underwent circular strength training had showed significant improved in the selected variables namely such as arm strength, leg strength, explosive strength and performance when compared to the control group. The control group did not show significant improvement in any of the selected variables. The past studies on selected physical fitness components and performance reveals of Vairavasundaram and



Palanisamy (2015) found that Bulgarian bag training showed a significant improvement in leg explosive power, muscular strength, and flexibility. Bobu Antony et al (2015) opined that 8 weeks bulgarian bag training showed a significant improvement in grip strength.

Conclusions

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

1. The experimental group volleyball players showed significant improvement in all the performance variables arm strength, leg strength, explosive strength and performance.
2. The control group volleyball ball players did not show significant improvement in any of selected variables.

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