



EFFECT OF BATTLE ROPE TRAINING ON SELECTED PHYSICAL AND PERFORMANCE VARIABLES AMONG KHO KHO PLAYERS

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ABSTRACT

The purpose of the study was to find out the effect of battle rope training on selected physical and performance and performance variables among Kho Kho players. To achieve the purpose of the study twenty four Kho Kho players have been randomly selected from Manonmaniam Sundaranar University, Tirunelveli 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 Kho Kho 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 battle training for 3 days a week, one session per day and for 6 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 battle rope training group and control group. And also battle rope training group showed significant improvement on explosive power, core strength and performance variables compared to control group.

Key words: battle rope training, explosive power, core strength,

INTRODUCTION

Kho Kho is essentially an Indian game, which commands huge popularity in India as well as in its hinterland. The game is known as Kho Kho in all parts of India. speed, agility, dodging and movement of hand and feet are the basic skills that one has to acquire, in order to play Kho Kho.

The Battling Ropes System was created and developed by John Brookfield. John is a multiple world record holder and the author of the popular book, *Mastery of Hand Strength*. Battle ropes are commonly used as a high intensity interval training (HIIT) tool to develop an athlete's strength, power, explosiveness, as well as their anaerobic and aerobic endurance. Battling Ropes or heavy rope training gives the entire body countless benefits. The great thing about training with the Battling Ropes is that movements and techniques can be modified for exercisers of just about any fitness level; from using both hands to grip and work only one end of the rope, to adding more advanced movements that include lower body movements along with the upper body work.

Recently, large diameter ropes (1-2 inches) weighing approximately 20 to 75 pounds called battling ropes have emerged as an alternative training apparatus for HIIT programs. Battling ropes are typically 40 to 50 feet in length and are anchored securely to the floor in the middle

of the rope, creating two lengths of 20-25 ft. With knees slightly bent, the exerciser grasps the ends of the extended rope and moves his/her arms rapidly in an up and down motion with a vertical displacement of the rope. There are a number of exercises that can be done with battling ropes but two common motions are: both arms moving together called the "double whip" and both arms moving opposite to one another in the vertical plane called the "alternating whip". One advantage of using battle ropes is the degree in which they can be progressed and regressed, via altering exercise

selection (unilateral/bilateral limb movements), posture (i.e. standing, kneeling, sitting, prone, supine) and adding additional compound movements to the exercise (i.e. squats, lunges, hops, jumps, shuffles)

Apart from exercise selection, exercise intensity is also dependent on rope size, diameter and length, rest period and also the speed and amplitude of wave motion. Stanforth et al (2015) and Ratamess et al (2015).

Adam Linens (2015) opined that battle ropes are a great tool to help improve hand speed, grip strength, upper body strength & endurance, core strength & stability, and increase overall fitness level and conditioning. Using the ropes to perform basketball specific movements challenges the core to maintain good body position while completing the exercise, much like being bumped, grabbed, and fouled while playing the game.

METHODOLOGY

To achieve the purpose of the study twenty four Kho Kho players have been randomly selected from Manonmaniam Sundaranar University, Tirunelveli 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 Kho Kho 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 battle training for 3 days a week, one session per day and for 6 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.

TABLE-I CRITERION MEASURE

S.No	Criterion measure	Test items	Unit of measurement
1	Explosive power	Seated medicine ball throw	In centimeters
2	Core strength	Plank test	In seconds(1/100)
3	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	Explosive power	BTG	3.95	0.04	4.28	0.12	4.29
		CG	3.98	0.06	4.08	0.18	4.08
2	Core strength	BTG	89.76	5.70	143.73	14.58	143.63
		CG	88.09	4.96	97.99	27.23	98.10
3	Performance	BTG	5.61	0.08	7.20	0.12	7.17
		CG	5.65	0.07	6.46	0.84	6.49

BTG = battle rope training group CG= Control group

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

TABLE – III

COMPUTATION OF ANALYSIS OF COVARIANCE ON PHYSICAL AND PERFORMANCE VARIABLES AMONG KHO KHO PLAYERS

S.No	Variables	Test	Sum of variance	Sum of squares	df	Mean square	F ratio
1	Explosive power	Pre-test	B.G.	0.006	1	0.006	1.99
			W.G.	0.062	22	0.003	
		Post-test	B.G.	0.23	1	0.23	9.33*
			W.G.	0.55	22	0.02	
		Adjusted means	B.S.	0.23	1	0.23	9.16*
			W.S.	0.54	21	0.02	
2	Core strength	Pre-test	B.G.	16.63	1	16.63	0.58
			W.G.	629.49	22	28.61	
		Post-test	B.G.	12557.01	1	12557.0	26.31*
			W.G.	10498.43	22	477.20	
		Adjusted means	B.S.	12118.19	1	12118.19	24.26*
			W.S.	10487.78	21	499.41	
3	Performance	Pre-test	B.G.	0.009	1	0.009	1.21
			W.G.	0.15	22	0.007	
		Post-test	B.G.	3.30	1	3.30	8.96*
			W.G.	8.106	22	0.36	
		Adjusted means	B.S.	2.610	1	2.61	7.16*
			W.S.	7.653	21	0.36	

*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 explosive power, core strength and performance. The obtained 'F' ratio of 1.99, 0.58 and 1.21 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 explosive power, core strength and performance. The obtained 'F' ratio of 9.33, 26.31 and 8.96 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 explosive power, core strength and performance. The obtained 'F' ratio of 9.16, 24.26 and 7.16 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 explosive power, core strength and performance. The result of the study indicated that there was a significant difference among the adjusted post test means of battle rope training group and control group. And also battle rope training group showed significant improvement on explosive power, core strength and performance compared to control group.

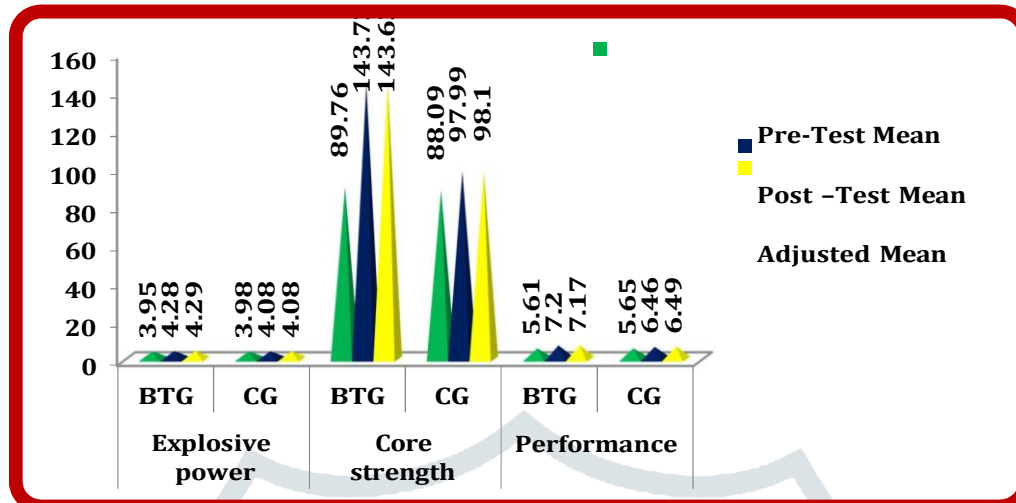


FIGURE-I THE PRE-TEST, POST-TEST AND ADJUSTED POST-TEST MEAN VALUES OF BATTLE ROPE TRAINING GROUP AND CONTROL GROUP ON EXPLOSIVE POWER, CORE STRENGTH AND PERFORMANCE

DISCUSSION OF FINDINGS

The results of the study indicate that the experimental group which underwent battle rope training group had showed significant improved in the selected variables namely such as explosive power, core 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 and performance reveals Bobu Antony et al (2015) and Colin McAuslan (2013).

CONCLUSIONS

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

1. The experimental group showed significant improvement in all the physical variables such as explosive power, grip strength, core strength and performance.
2. The control group did not show significant improvement in any of selected variables.

REFERENCES

- Andy Rivandeneira, Battle Ropes and More..Equipment Review (2014).
- Bobu Antony, Uma Maheswri, M., & Palanisamy, A. (2015). Effect of Battle rope training on selected physical and physiological variables among college level Athletes, *Indian Journal of Applied Research*, 5(5):1-4.
- Bobu Antony, Uma Maheswri, M., & Palanisamy, A. (2015). Effect of Battle rope training on selected physical and physiological variables among college level Athletes, *International Journal of Applied Research*, 1(8): 403-406.
- Colin McAuslan (2013). *Physiological Responses to a Battling Rope High Intensity Interval Training Protocol*. Electronic Theses and Dissertations, University of Windsor Scholarship at UWindsor.
- John Brookfield. *Battling Ropes Training System*. West Warwick, RI, 02893,2015, 888-556- 7464.
- Prakash, K.M., and Kaba Rosario, C (2017). Impact of battle rope training on selected physical fitness components and performance variables among volleyball players. *Indian journal of research*. Vol 6 (4): 2250-1991
- Ratamess, N.A, Smith, C.R, Beller, N.A, Kang, J., Faigenbaum, A.D., Bush, J.A. (2015). Effects of Rest Interval Length on Acute Battling Rope Exercise Metabolism. *The Journal of Strength & Conditioning Research*.29(9):2375-87.