



## Impact of yogic practice and resistance training on selected physical variables among male Kho Kho players

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### Abstract

Kho kho is a team game. Apart from physical Flexibilitys like good fitness level, reflexes, stamina one needs team skills and also thinking skills. The purpose of the study was to find out the impact of yogic practices and resistance training on selected physical variables among male Kho Kho players. To achieve the purpose of the present study, sixty inter-collegiate level Kho Kho players were selected as subjects at random from affiliated colleges of Bharathidasan University, Tiruchirappalli, Tamilnadu state, India and their ages ranged from 20 to 24 years. The subjects were selected physical variables namely Speed, Flexibility and Endurance; the subjects were divided into three equal groups of twenty each. Analysis of Covariance (Ancova) to find out the significance among the mean differences, whenever the 'F' ratio for adjusted test was found to be significant, Scheffe's post hoc test was used. The result reveals that the specific yogic practices group showed significant differences on speed, Flexibility and endurance than the control group. The result reveals that the resistance training group showed significant differences on speed, Flexibility and endurance than the control group. The resistance training group showed significant improvement speed and Flexibility than the yogic practices and control groups.

**Keywords:** Physical, speed, flexibility, endurance kho-kho

### Introduction

Training is a program of exercises designed to improve the skills and increase the energy capacity of an athlete for a particular event, Training is extremely important and should form an integral part of all elite athlete's daily routines. Training allows the body to gradually build up Flexibility and endurance, improve skill levels and build motivation, ambition and confidence. Kho kho is a team game. Apart from physical Flexibility like good fitness level, reflexes, stamina one needs team skills and also thinking skills. Yoga is a deliberate and exact methodology to control and develop the mind and the body to accomplish awesome prosperity, change of mind and self-affirmation, Yoga is proposed for union or understanding of mind and the body. Yoga is the examination of physical and enthusiastic prosperity. Resistance preparing is a type of quality preparing in which every exertion is performed against a particular restricting power created by resistance. Resistance practice is utilized to build up the quality and size of skeletal muscles.

The purpose of the study was to find out the impact of yogic practices and resistance training on selected physical variables among male Kho Kho players. To achieve the purpose of the present study, sixty inter-collegiate level Kho Kho players were selected as subjects at random from affiliated colleges of Bharathidasan University, Tiruchirappalli, Tamilnadu state, India and their ages ranged from 20 to 24 years. The subjects were divided into three equal groups of twenty each. The selected subjects had earlier playing experience of at least four years in Kho Kho and only those who represented their respective college teams were taken as subjects. Physical fitness components Speed was measured by 50 mts dash, Flexibility was measured by Sit and reach test & Endurance was measured by 12 MinRun/Walk. Experimental group-I was exposed to yogic practices, experimental group-II was exposed to resistance training and control group was not exposed to any training. The duration of experimental period was 8 weeks. The following statistical techniques were used analysis of Covariance (Ancova) to find out the significance among the mean differences, whenever the 'F' ratio for adjusted test was found to be significant, Scheffe's post hoc test was used.

### Matrials and Methods

**Table 1:** Computation of analysis of covariance of mean of yogic practices resistance training and control groups on speed

	YPG	RTG	CG	Source of Variance	Sum of Squares	df	Means Squares	F-ratio
Pre-Test Means	7.61	7.57	7.59	BG	0.014	2	0.007	0.12
				WG	3.38	57	0.05	
Post-Test Means	7.35	7.12	7.54	BG	1.73	2	0.86	14.66*
				WG	3.37	57	0.05	
Adjusted Post-Test Means	7.34	7.13	7.54	BG	1.68	2	0.84	16.09*
				WG	2.93	56	0.05	

BG- Between Group Mean Significant WG- Within Group Means (Table Value for 0.05 Level for df 2 & 57 = 3.15) df- Degrees of Freedom (Table Value for 0.05 Level for df 2&57 = 3.16)

**Results of Speed**

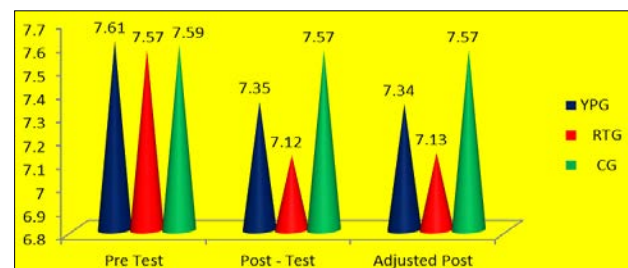
An examination of table 1 indicated that the pre-test means of yogic practices, resistance training and control groups were 7.61, 7.57 and 7.59 respectively. The obtained F-ratio for the pre-test was 0.12 and the table F-ratio was 3.15. Hence the pre-test mean F-ratio was insignificant at 0.05 level of confidence for the degree of freedom 2 and 57. This proved that there was no significant difference between the experimental and control groups. The post-test means of the yogic practices, resistance training and control groups were 7.35, 7.12 and 7.54 respectively. The obtained F-ratio for the post-test was 14.66 and the table F-ratio was 3.15. Hence the post-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 2 and 57. This proved that the differences between the post test means of the subjects were significant. The adjusted post-test means of the yogic practices, resistance training and control groups were 7.34, 7.13 and 7.54 respectively. The obtained F-ratio for the adjusted post-test means was 16.09 and the table F-ratio was 3.16. Hence the adjusted post-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 2 and 56. This proved that there was a significant difference among the means due to the experimental trainings on speed. Since significant differences were recorded, the results were subjected to post hoc analysis using Scheffe’s post hoc test. The results were presented in Table-2.

**Table 2:** The scheffe’s test for the differences between the adjusted post test paired means on speed

Adjusted Post-test means			Mean Difference	Required CI
YPG	RTG	CG		
7.34	7.13	---	0.22*	0.18
7.34	---	7.54	0.20*	
---	7.13	7.54	0.42*	

\* Significant at 0.05 level of confidence

The multiple comparisons showed in Table 2 proved that there existed significant differences between the adjusted means of specific yogic practices and resistance training (0.22), yogic practices and control group (0.20), resistance training and control group (0.42) at 0.05 level of confidence with the confidence interval value of 0.18. The pre, post and adjusted means on speed were presented through bar diagram for better understanding of the results of this study in Fig-1



**Fig 1:** Pre post and adjusted post test differences of the yogic practices, resistance training and control groups on speed

**Table 3:** Computation of analysis of covariance of mean of yogic practices, resistance training and control groups on flexibility

	YPG	RTG	CG	Source of Variance	Sum of Squares	df	Means Square	F-ratio
Pre-Test Means	8.05	7.85	8.00	BG	0.43	2	0.21	0.63
				WG	19.50	57	0.34	
Post-Test Means	12.00	15.15	8.20	BG	484.43	2	242.21	536.16*
				WG	25.75	57	0.45	
Adjusted Post-Test Means	12.02	15.11	8.20	BG	474.06	2	237.0	549.17*
				WG	24.17	56	0.43	

BG- Between Group Means\* - Significant WG- Within Group Mean (Table Value for 0.05 Level for df 2 & 57 = 3.15) df- Degrees of Freedom (Table Value for 0.05 Level for df 2 & 57 = 3.16)

**Results of Flexibility**

An examination of table 6 indicated that the pre-test means of yogic practices, resistance training and control groups were 8.05, 7.85 and 8.00 respectively. The obtained F-ratio for the pre-test was 0.63 and the table F-ratio was 3.15. Hence the pre-test mean F-ratio was insignificant at 0.05 level of confidence for the degree of freedom 2 and 57. This proved that there was no significant difference between the experimental and control groups. The post-test means of the yogic practices, resistance training and control groups were 12.00, 15.15 and 8.20 respectively. The obtained F-ratio for the post-test was 536.16 and the table F-ratio was 3.15. Hence the post-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 2 and 57. This proved that the differences between the post test means of the subjects were significant. The adjusted post-test means of the yogic practices, resistance training and control groups were 12.02, 15.11 and 8.20 respectively. The obtained F-ratio for the adjusted post-test means was 549.17 and the table F-ratio was 3.16. Hence the adjusted post-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 2 and 56. This proved that there was a

significant difference among the means due to the experimental trainings on Flexibility. Since significant differences were recorded, the results were subjected to post hoc analysis using Scheffe’s post hoc test. The results were presented in Table 4.

**Table 4:** The scheffe’s test for the differences between the adjusted post test paired means on flexibility

Adjusted Post-test means			Mean Difference	Required CI
YPG	RTG	CG		
12.02	15.11	---	3.09*	0.52
12.02	---	8.20	3.82*	
---	15.11	8.20	6.91*	

\* Significant at 0.05 level of confidence

The multiple comparisons showed in Table 4.7 proved that there existed significant differences between the adjusted means of yogic practices and resistance training (3.09), yogic practices and control group (3.82), resistance training and control group (6.91) at 0.05 level of confidence with the confidence interval value of 0.52. The pre, post and adjusted means on Flexibility were presented through bar diagram for better understanding of the results of this study in Fig-2.

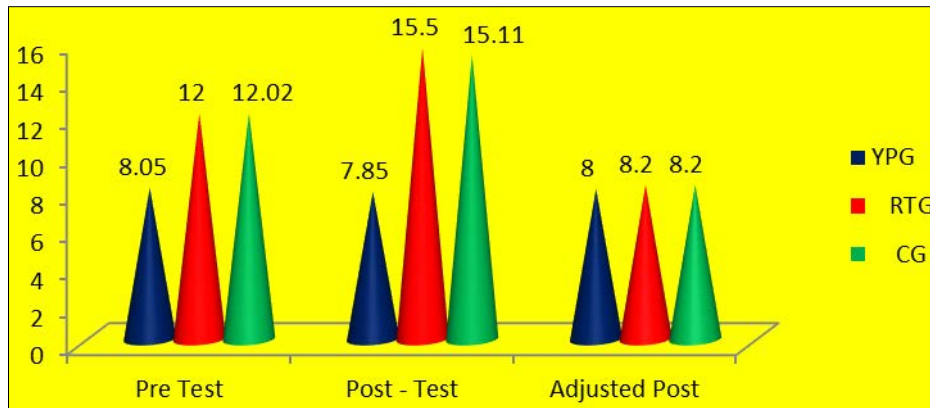


Fig 2: Pre post and adjusted post test differences of the specific yogic practices, resistance training and control groups on flexibility

Table 5: Computation of analysis of covariance of mean of yogic practices, resistance training and control groups on endurance

	YPG	RTG	CG	Source of Variance	Sum of Squares	df	Means Squares	F-ratio
Pre-Test Means	1608.50	1596.0	1599.25	BG	1682.50	2	841.25	0.28
				WG	166898.75	57	2928.04	
Post-Test Means	1740.0	1758.25	1593.50	BG	326252.50	2	163126.25	95.15*
				WG	97718.75	57	1714.36	
Adjusted Post-Test Means	1740.49	1757.89	1593.36	BG	326703.19	2	163351.59	94.36*
				WG	96934.94	56	1730.98	

BG- Between Group Means Significan\* WG- Within Group Means (Table Value for 0.05 Level for df 2 & 57 = 3.15) df- Degrees of Freedom (Table Value for 0.05 Level for df 2 & 57 = 3.16)

**Results of Endurance**

An examination of table 5 indicated that the pre-test means of specific yogic practices, resistance training and control groups were 1608.50, 1596.00 and 1599.25 respectively. The obtained F-ratio for the pre-test was 0.28 and the table F-ratio was 3.15. Hence the pre-test mean F-ratio was insignificant at 0.05 level of confidence for the degree of freedom 2 and 57. This proved that there was no significant difference between the experimental and control groups. The post-test means of the specific yogic practices, resistance training and control groups were 1740.00, 1758.25 and 1593.50 respectively. The obtained F-ratio for the post-test was 95.15 and the table F-ratio was 3.15. Hence the post-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 2 and 57. This proved that the differences between the post test means of the subjects were significant. The adjusted post-test means of the specific yogic practices, resistance training and control groups were 1740.49, 1757.89 and 1593.36 respectively. The obtained F-ratio for the adjusted post-test means was 94.36 and the table F-ratio was 3.16. Hence the adjusted post-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 2 and 56. This proved that there was a significant difference among the means due to the experimental trainings on endurance. Since significant differences were recorded, the results were subjected to post hoc analysis using Scheffe’s post hoc test. The results were presented in Table 6.

Table 6: The scheffe’s test for the differences between the adjusted post test paired means on endurance

Adjusted Post-test means			Mean Difference	Required CI
YPG	RTG	CG		
1740.49	1757.89	---	17.40	33.07
1740.49	---	1593.36	147.13*	
---	1757.89	1593.36	164.53*	

\* Significant at 0.05 level of confidence

The multiple comparisons showed in Table 4.9 proved that there existed significant differences between the adjusted means of yogic practices and control group (147.13), resistance training and control group (164.53). There was no significant difference between specific yogic practices and resistance training (17.40) at 0.05 level of confidence with the confidence interval value of 33.07. The pre, post and adjusted means on endurance were presented through bar diagram for better understanding of the results of this study in Fig-3.

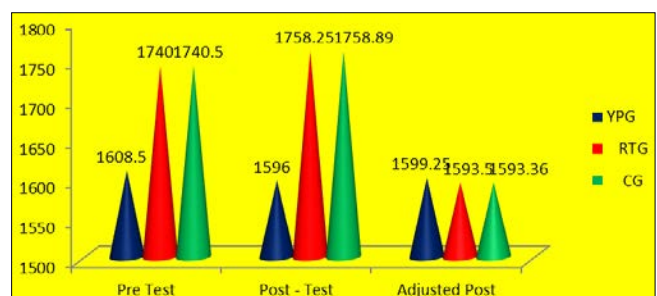


Fig 3: Pre post and adjusted post test differences of the yogic practices, resistance training and control groups on endurance

**Conclusions**

The following conclusions have been made in the light of the findings of the present study,

1. The result reveals that the specific yogic practices group showed significant differences on speed, Flexibility and endurance than the control group.
2. The result reveals that the resistance training group showed significant differences on speed, Flexibility and endurance than the control group.
3. The resistance training group showed significant improvement speed and Flexibility than the specific yogic practices and control groups.

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