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J Sai Gayathri
Ph.D., Scholar, Department of
Physical Education, SPMVV,
Tirupati, Andhra Pradesh, India

G Sarah Sarojini
Professor, Department of
Physical Education, SPMVV,
Tirupati, Andhra Pradesh, India

Effect of Surya Namaskar practices and pranayama on vital capacity among Kho-Kho players

J Sai Gayathri and G Sarah Sarojini

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Abstract

The Aim of the study was to find out the effect of Surya Namaskar Practices and Pranayama Practices on Vital Capacity among Women Kho-Kho Players. The investigator randomly selected 90 women Kho-Kho Players ($n = 90$), who competed at inter collegiate level sports competitions and the age of players were between 17 and 21 years. They were divided into three groups with thirty subjects each ($n = 30$) at random again consisting thirty subjects in each group and they were randomly assigned as experimental group I Surya Namaskar Practices, Experimental group II Pranayama and control group. Vital Capacity has selected as criterion variable of this study. The experimental groups underwent Surya Namaskar Practices and Pranayama Practices for eight weeks three days per week and a session on each day. The difference between the Pre-test and post-test means were subjected to statistical treatment using ANCOVA. In all cases 0.05 level was fixed to test the hypothesis of the study, which was considered as an appropriate. It was concluded from the result of the study that there was a significant improvement ($p \leq 0.05$) due to Surya Namaskar Practices and Pranayama Practices on Vital Capacity as compared to control group.

Keywords: Vital capacity, Surya Namaskar practices and pranayama

Introduction

Yoga is about creating balance, strength, flexibility and relaxation in the body through a series of postures, movements and breathing patterns. Yoga not only improve the functions of the respiratory system and the circulatory system, they also help develop muscular strength, endurance, and flexibility, effectively affecting changes in human body composition. Yoga is a science practiced in India over thousands of years. It produces consistent physiological changes and have sound scientific basis. All over the world scientists has extensively studied yoga and claimed that increases longevity, and has therapeutic and rehabilitative value. Yogic techniques are known to improve overall performance and work capacity. Yoga is a holistic mind-body intervention targeted at physical, mental, emotional, and spiritual well-being yoga programme improves cardio respiratory endurance, muscular strength and endurance, and flexibility.

Fitness is a term which is often used as synonyms to health in a limited manner. Fitness denotes, different facts of health. The term fitness is the capacity of the individual to live and function effectively, purposefully, here and now to meet confidently the problems and crises which are among his expectations.

Materials and Methods

The purpose of the study was to find out the effect of Surya Namaskar Practices and Pranayama on Vital Capacity among Women Kho Kho Players. The investigator randomly selected 90 Women Kho Kho Players from different colleges in Prakasam and the age of players were between 17 and 21 years. The selected subjects were randomly divided into three equal groups of thirty subjects each ($n = 30$). Experimental group I is assigned as Surya Namaskar Practices and Experimental group II is assigned as Pranayama Practices and control group. During the training period, the experimental groups underwent their respective training programme for eight weeks 3 days per week.

Corresponding Author:
J Sai Gayathri
Ph.D., Scholar, Department of
Physical Education, SPMVV,
Tirupati, Andhra Pradesh, India

Control group did not participate in any specific training. Vital Capacity was selected as dependent variable for this study. It was measured through Spirometer test. Pre-test was conducted before experimental treatment. The fact finding assists in Surya Namaskar Practices and Pranayama Practices. Post-test was conducted after experimental treatment. The collected data were statistically examined by analysis of covariance (ANCOVA). The confidence level was fixed at

0.05 levels, which is appropriate to the present study

Results on Vital Capacity

The statistical analysis comparing the Initial and Final means of Vital Capacity due to Surya Namaskar Practices and Pranayama Practices among Kho Kho Players is presented in Table 1.

Table 1: Analysis of Covariance on Vital Capacity of Experimental Groups and Control Group

Test	Surya Namaskar Practices Group	Pranayama Group	Control Group	Source of variance	Sum of squares	DF	Mean Squares	Obtained f - ratio
Pre Test Mean	2640.00	2659.00	2660.67	Between	7908.89	2	3954.44	0.07
				Within	5010256.67	87	57589.16	
Post Test Mean	2874.00	2987.33	2638.00	Between	1905742.22	2	952871.11	18.42*
				Within	4501586.67	87	51742.38	
Adjusted Post Test Mean	2881.02	2984.27	2634.05	Between	1942809.31	2	971404.65	27.05*
				Within	3088768.92	86	35915.92	
Mean Diff	234.00	328.33	22.67					

The value of required for significant at 0.05 levels with 2 and 87 (df) = 3.10, 2 and 86 (df). 3.10

*Significant

Pre-Test the obtained pre-test means on Vital Capacity on Surya Namaskar Practices group was 2640.00 and Pranayama group was 2659.00 was and Control group was 2660.67. The obtained pre-test F value was 0.07 and the required table F value was 3.10, which proved that there was no significant difference among initial scores of the subjects. Post – Test The obtained post-test means on Vital Capacity on Surya Namaskar Practices group was 2874.00 and Pranayama group was 2987.33 was and Control group was 2638.00. The obtained post-test F value was 18.42* and the required table F value was 3.10, which proved that there was significant

difference among post test scores of the subjects. Adjusted Post - Test Taking into consideration of the pre-test means and post-test means adjusted post-test means were determined and analysis of covariance was done and the obtained F value 27.05* was greater than the required value of 3.10 and hence it was accepted that there was significant differences among the treated groups. Since significant differences were recorded, the results were subjected to analysis using Scheffe's post Hoc Confidence Interval test. The results were presented in Table 2.

Table II: Multiple Comparisons of Paired Adjusted Means and Scheffe's Post Hoc Confidence Interval Test results on Vital Capacity

Means				Confidence Interval
Surya Namaskar Practices Group	Pranayama Group	Control Group	Mean Difference	
2881.02	2984.27		103.24	121.84
2881.02		2634.05	246.97*	121.84
	2984.27	2634.05	350.22*	121.84

* Significant

The post hoc analysis of obtained ordered adjusted means proved that there was significant differences existed between Surya Namaskar Practices and control group (MD: 246.97*). There was significant difference between Pranayama and control group (MD: 350.22*). There was no significant difference between treatment groups, namely, Surya Namaskar Practices and Pranayama. (MD: 103.24).

Conclusions

Any practical application requires careful implementation and individual experimentation. In conclusion, the Vital Capacity can be developed during the age between 17-21 yrs women Kho Kho Players and favour the prescription of Surya Namaskar Practices and Pranayama. It was concluded that, Surya Namaskar Practices and Pranayama made significantly improved on Vital Capacity of women Kho-Kho Players. However there was an insignificant difference between the training groups.

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