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Effect of asanas with pranayama practices on flexibility and vital capacity of pre adolescence school girls

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Abstract

To achieve the purpose of the present study thirty adolescence girls subject were selected from St. Joseph Middle School, Somanur, Coimbatore, and Tamil Nadu. Their age ranged from 10 to 13 years. They were assigned to two groups namely experimental group-I with consists of fifteen asanas with pranayama given for 16 weeks 5 days a week and from 4 am to 5 pm and other group-II with fifteen acted as control group. The selected criterion variables are flexibility and vital capacity. The criterion variables flexibility tested with sit and reach test and vital capacity tested with wet spirometer. Sixteen weeks of yogaanas training data were collected pre, after 6 weeks mid, and 6 weeks post-tests data were collected and treated with one way repeated ANCOVA. If obtained 'F' ratio was significant Newman Kuels test used. The level of confidence was fixed at 0.05. The study of the results showed that the experimental group had significantly improved on flexibility and vital capacity which was due to the effect of asanas with pranayama practice programme. The control group did not change on selected criterion variables.

Keywords: Asana with pranayama practice, flexibility and vital capacity

Introduction

Yoga is believed to be one of the most vital and important part of the Indian culture. Even before 2000 years ago our forefathers developed it to bind the body, mind and spirit, as a harmonious whole. Nowadays, the whole world is looking towards yoga for answers to various problems of human beings. Yoga means the experience of oneness or unity with the inner being. It is not a religion but a good method by which one can obtains control over one's latent power attain complete self- realization it is a re- education of one's mental processes, along with the physical. In the age of modern science and information technology, and changing world scenario with global warming with its attendant factors, our lifestyle becomes complicated and it becomes difficult to lead a normal and natural life the eight limbs of Yoga described in the Sutras by Patanjali is usually referred to as Classical Yoga. The yoga Sutras were most likely written around the years 100- 200 A.D. and consists of about 200 aphorisms. Here Yoga is presented in a systematic and approachable way, and many yogis see it as an important source of yogic understanding. Almost all serious yoga practitioners will at some point study this literature and it has been published with commentary many times since it was first published. A few hundred years after Patanjali, the evolution of yoga took an interesting turn- the potential of the human body has now become an interesting field of study. Yogis of the past had not paid much attention to the physical body, as they focused all their energy on contemplation and meditation. Their goal was to leave their bodies and the world, in order to re- unites with the shapeless reality of the soul. The new generation of yogis however, developed a system where different exercises- in conjunction with deep breathing and meditation, would keep the body young and healthy. The human body was regarded as the temple of the immortal soul, and not just a meaningless vessel to be abandoned at the first opportunity. This paved the way for the creation of hatha yoga, and other branches and schools of tantric yoga (Iyengar, 2008). The combination of gentle stretching, deep breathing, meditation, and guided relaxation releases body tension and calms the nervous system and emotions, giving a sense of renewal to the body, mind, and spirit. It builds internal and external awareness as a focused practice, yoga builds awareness of the body and feelings, along with increasing awareness of the needs of others, our communities, and our world.

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Finally facilitates improved health in addition to exercising the mind and muscles, yoga exercises and massages the glands and organs and increases circulation throughout the body, resulting in improved digestion, elimination of toxins, and the promotion of overall health. Pranayama is not as many think, something about breath; breath indeed has very little to do with it, if any thing. Breathing in only one of the many exercises through which we get to the real pranayama. Pranayama means the control of prana. The prana which is working this mind and body is the nearest to us of all the prana in this universe. This little wave of the prana which represents our own energise, mental and physical, is the nearest to us of all the waves of the infinite ocean of prana. It we can succeed in controlling that little wave, then alone we can hope to control the whole of prana (swami vivekananda 2013) [5]. The purpose of the study was to find out effect of asanas with pranayama practices on flexibility and vital capacity of pre adolescence school girls.

Methodology

To achieve the purpose of the present study thirty adolescence girls subject were selected from St. Joseph Middle School, Somanur, Coimbatore, and Tamil Nadu. Their age ranged from 10 to 13 years. They were assigned to two groups namely experimental group-I with consists of fifteen asanas with pranayama given for 16 weeks 5 days a week and from 4 am to 5 pm and other group-II with fifteen acted as control group. The selected criterion variables are flexibility and vital capacity. The criterion variables flexibility tested with sit and reach test and vital capacity tested with wet spirometer. Sixteen weeks of yogaanas training data were collected pre, after 6 weeks mid, and 6 weeks post-tests data were collected and treated with one way repeated ANCOVA. If obtained ‘F’ ratio was significant Newman Kuels test used. The level of confidence was fixed at 0.05.

Training Program

Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Rep	12	12	12	11	11	11	10	10	10	9	9	9	7	7	5	5
Set	3	3	4	4	5	5	6	6	7	7	8	8	9	9	10	10

Asanas

Pada astha asana, prai asana, pachi motta asana, vajraasana, bhujanga asana, nava asana, trikona asana, halasana Prana yama: Nadi sudhi, Bastrika, alluloma–Viluloma, savithri pranayama, kapalapathi

Results

To examine whether the obtained differences between the means of flexibility in pre-test, mid test and post-test are statistically significant one way repeated measures ANOVA is applied and the statistical analysis has been summarized.

Table 2: One way repeated measures anova on flexibility of pre, mid and post-tests of experimental and control groups on Pre adolescence school girls

Group	Source of Variance	Sum of Squares	df	Mean Square	‘F’ ratio
Experimental Group	Between	451.104	2	225.552	119.1*
	Error	53.014	28	1.893	
Control Group	Between	8.722	2	4.361	0.77
	Error	157.048	28	5.609	

*Significant at 0.05 level. The table value required for significance at 0.05 level with df 2 and 28 is 3.34.

Table- I shows that the experimental group of obtained F-ratio values of asanas with pranayama practices on the selected variable flexibility significant difference of obtained ‘F’ ratio is 119.1 which is greater than the table value of 3.34 with df 2

and 28 required for significance at 0.05 level of confidence and control group no significant difference of obtained ‘F’ ratio was 0.77 lesser than table value 3.34 with df 2 & 28.

Table 3: Newman Keuls Test for Differences between Treatment Means on Flexibility of Experimental Group

Means	Ordered Means			Range (r)	Critical Value	
	Pre Test	Mid Test	Post Test			
	17.49	22.46	25.13			
Pre Test	17.49	-	4.97*	7.64*	3	1.31
Mid Test	22.46	-	-	2.67*	2	1.07
Post Test	25.13	-	-	-	-	-

*Significant

The table- II shows that obtained mean differences between the pre test and the mid test (8th week) are lesser than the critical value at 1.31 level in flexibility. It is inferred from the results of the study that asanas with pranayama practices group had significant changes of from the 1st phase to the 2nd

phase. The obtained mean differences between the mid test and the post test (16th week) are higher than the critical value at 1.07 level in flexibility. It is inferred from the results of the study that asanas with pranayama practices group had significant changes in from the 2nd phase to the 3rd phase.

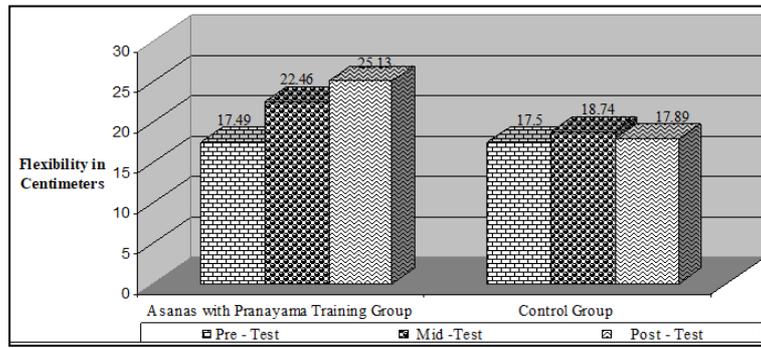


Fig 1: Mean Values of Asanas with Pranayama Group and Control Group of Flexibility on Pre Adolescence School Girls

To examine whether the obtained differences between the means of vital capacity in pre-test, mid test and post-test are

statistically significant one way repeated measures ANOVA is applied and the statistical analysis has been summarized.

Table 4: One Way Repeated Measures Anova on Vital Capacity of Pre, Mid and Post Tests of Experimental and Control Groups on Pre Adolescence School Girls

Group	Source of Variance	Sum of Squares	df	Mean Square	'F' ratio
Experimental Group	Between	859662.446	2	429831.223	8.284*
	Error	1452872.714	28	51888.391	
Control Group	Between	1894.632	2	947.316	0.142
	Error	187418.488	28	6693.517	

*Significant at 0.05 level. The table value required for significance at 0.05 level with df 2 and 28 is 3.34.

Table- III shows that the experimental group of obtained F-ratio values of asanas with pranayama practices on the selected variable vital capacity significant difference of obtained 'F' ratio is 8.284 which is greater than the table

value of 3.34 with df 2 and 28 required for significance at 0.05 level of confidence and control group no significant difference of obtained 'F' ratio was 0.142 lesser than table value 3.34 with df 2 & 28.

Table 5: Newman Keuls Test for Differences between Treatment Means on Vital Capacity of Experimental Group

Means		Ordered Means			Range (r)	Critical Value
		Pre Test	Mid Test	Post Test		
Pre-Test	1199.4	1199.4	1337.3	1536.1	3	217.69
Mid Test	1337.3	-	137.9	336.7*	2	178.39
Post Test	1536.1	-	-	-	-	-

*Significant

The table- IV shows that obtained mean differences between the pre-test and the mid test (8th week) are lesser than the critical value at 217.69 level in vital capacity. It is inferred from the results of the study that asanas with pranayama practices group had no significant changes of from the 1st phase to the 2nd phase. The obtained mean differences between

the mid test and the post test (16th week) are higher than the critical value at 178.39 level in vital capacity. It is inferred from the results of the study that asanas with pranayama practices group had significant changes due to asanas with pranayama practices on selected variable vital capacity there is significant difference in from the 2nd phase to the 3rd phase.

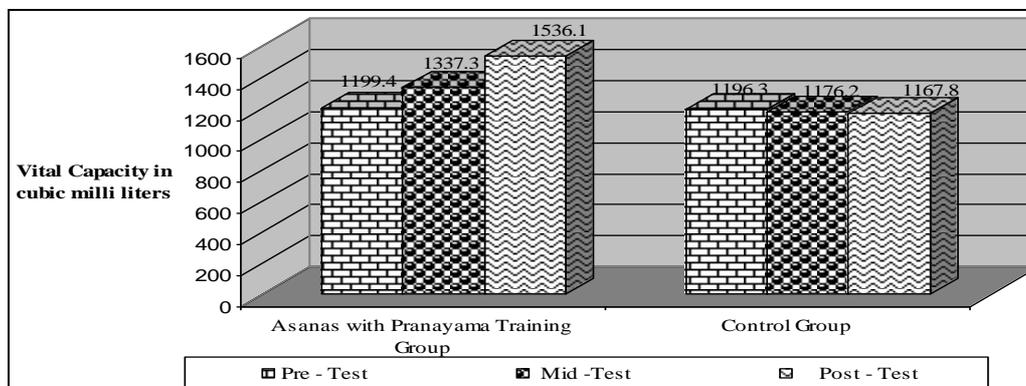


Fig 2: Mean Values of Asanas with Pranayama Group and Control Group of Vital Capacity on Pre Adolescence School Girls

Discussion on Findings

Based on results of the study it is statistically proved that significant improvement of flexibility and vital capacity pre adolescence school girls. The results are in conformity with

other studies; Effects of yogic pranayama and combination of continuous running and yogic pranayama exercise on cardio-respiratory endurance and vital capacity improved (Sakthignanavel. 1995)^[1] and effects of aerobic exercises and

yogic practices on selected physiological variables vital capacity improved on school girls (Punithavathi, 2010) ^[2]. Effect of yogic practices on vital capacity improved and total cholesterol reduced (Prabakaran, and Chidambara Raja 2012) ^[3]. Effect of yogic practice and physical fitness on flexibility, anxiety and blood pressure was altered (Chidambara Raja 2010) ^[4].

Conclusions

The experimental group had significantly improved selected flexibility and vital capacity pre adolescence school girls due effect of asana with pranayama practices programme. The control group did not changes on selected variables.

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