Impact Of Asana And Pranayama Practices On Selected Physiological Variables Among College Students

M. Bastin Ranjith[1*], **Dr.D. Rajalakshmi**[2]

[1*]Ph.D. Scholar, Alagappa University College of Physical Education, Alagappa University, Karaikudi, Tamilnadu, India. bastinranjith@gmail.com
[2]Associate Professor, Alagappa University College of Physical Education, Alagappa University, Karaikudi, Tamilnadu, India.kumaravelraji@rediffmail.com

ABSTRACT
This study was designed to investigate the impact of asana and pranayama practices on selected physiological variables among college students. To achieve the purpose of the study (N=60) sixty men college students were selected from Bharathidhasan University, Tamilnadu, India as subjects. The age of the subjects ranged from 19 to 25 years. The selected subjects were divided into three groups (n=20). Group I underwent asana practices. Group II underwent pranayama practices. Group III acted as control group who did not undergo any specialized training program other than their daily routine. The physiological variables such as breathe holding time, blood pressure and heart rate were selected as dependent variables and they were assessed by stop watch, digital monitor, and stop watch – beats respectively. The subjects were concerned with their particular training for a period of sixteen weeks, six days per week. The collected data from two groups prior to and immediately after the training programme on selected criterion variables were statistically analyzed with analysis of covariance (ANCOVA). The level of confidence was fixed at 0.05 for all the cases to test the hypothesis. The result of the study reveals that the asana and pranayama training group achieved significant improvement on selected physiological variables such as breathe holding time, blood pressure and heart rate among college men students.

Keywords: Asana and Pranayama, Breathe Holding Time, Blood Pressure and Heart Rate**.**

INTRODUCTION

Yoga is the best and oldest Art of being and the Science of becoming, time tested for more than 5000 years ago, the Rishis and Siddhas of India turned their mind inwards and discovered their true nature. This resulted in the development of a holistic system called the **YOGA.** In recent decades, several medical and scientific studies on yoga proved it to be very useful in the treatment of some diseases. Yoga is the art and science of living and is concerned with the evolution of mind and body. It is a form of complete education that can be used on all because it develops physical stamina, emotional stability, and intellectual and creative talents. It is a unified system for developing a total and balanced personality. Yoga is basically a method by which the transmission of energies in the physical, mental, intellectual, and spiritual bodies are synchronized and optimized.

Pranayama is an essential and esoteric aspect of yoga that deals with the manipulation of “prana”, or vital life energy, through the regulation of breath with the help of breathing exercises. The general impression is that pranayama is a physical practice of breath control. It may appear to be such, but in reality all such exercises have been devised to influence the nervous system and the panic body or psychic energy within all of us. Therefore, the control of this psychic energy is a major concern to the practitioner of yoga as a therapy to restore health and as an ideal means of preparation for meditation. Since, it is the most direct method to adjust the flow of energy in the body and a very powerful tool to do so, practitioners should exercise caution before they embark on the pranayama journey. People with any physical imbalance or those who are aged or suffer from coronary ailments should attempt this only under expert guidance. Asanas can run into several hundred in number, though about one hundred are perhaps better known today. There are two types of asanas: the therapeutic preventive and the meditative. **Sharma, Dr.P.D.(2011).**

METHODOLOGY

To find out the impact of asana and pranayama practices on selected physiological variables among college students, 60 men students from Bharathidasan University, Tiruchirapalli in the age group of 19 to 25 years were selected at randomly. They were divided into three groups, group I was treated as, asana practices group, group II was treated as, pranayama practices group and group III was treated as, control group. Experimental group was given sixteen weeks asanas and pranayama practice and the control group was not given any treatment. The training consists of 16 weeks for both groups, selected asana was practice by the asana group (Salabasana, Halasana, Virkasna, Sarvangasana, Shavasana, Viparita karani, Mayurasana, Bhujangasana, Makrasana, Dhanurasana, Ardhamatsyendrasana Vajrasana, Yoga Mudra, and Pavan Muktasana) and pranayama group were practiced by the (Nadi Sudhi, Nadi Shodhana Pranayama, Sitali, Sitkari , Ujjayi, Bhramari, and Bhastrika Pranayama) for 6 days in a week and 60 min/day, and the training

program was modified once in every 2 weeks. The physiological variables such as breathe holding time, blood pressure and heart rate were selected as dependent variables and they were assessed by stop watch, digital monitor and stop watch – beats respectively.

Table I: Selected Variables and Their Tests

S.No	Variables	Test	Unit of Measurements
1.	Heart Rate	Stop Watch	Beats / Minutes
2.	Breathe Holding Time	Stop Watch	Seconds
3.	Blood Pressure	Digital Monitor	Mm/Hg

STATISTICAL TECHNIQUE

Analysis of data using ANCOVA showed that there were significant difference between Experimental Groups and Control Group. The level of significance was fixed at 0.05 level of confidence. The F ratio was significant then the Scheffe's test for the differences of the adjusted post-test paired means of mental health was conducted and presented in this study.

Table- I

Computation of Analysis of Covariance of Means of Asana and Pranayama Practices and Control Group on Heart Rate, Breathe Holding Time and Blood Pressure.

(In Seconds and Minutes).

Variables	Test	Asana Training (ATG)	Pranayama Training (PTG)	Control Group (CG)	Source of Variance	Sum of Square	df	Mean Squares	F ratio
Heart Rate	Pre Test	71.70	71.60	71.25	Between	2.23	2	1.12	0.03
					Within	2506.75	57	43.98	
	Post Test	66.70	67.45	69.85	Between	108.30	2	54.15	1.70
					Within	1815.70	57	31.85	
	Adjusted Post Test	66.56	67.39	70.05	Between	133.29	2	66.65	10.75*
					Within	347.33	56	6.20	
Breathe Holding Time	Pre Test	37.20	36.90	37.25	Between	1.43	2	0.72	0.02
					Within	1926.75	57	33.80	
	Post Test	40.75	40.00	37.75	Between	97.50	2	48.75	1.94
					Within	1435.50	57	25.18	
	Adjusted Post Test	40.69	40.15	37.66	Between	104.96	2	52.48	6.36*
					Within	662.44	56	8.26	
Blood Pressure	Pre Test	99.70	98.30	98.90	Between	19.73	2	9.87	0.28
					Within	2002.20	57	35.13	
	Post Test	96.25	94.50	100.50	Between	380.83	2	190.42	7.20*
					Within	1507.75	57	26.45	
	Adjusted Post Test	95.64	95.06	100.56	Between	365.08	2	182.54	95.26*
					Within	107.32	56	1.92	

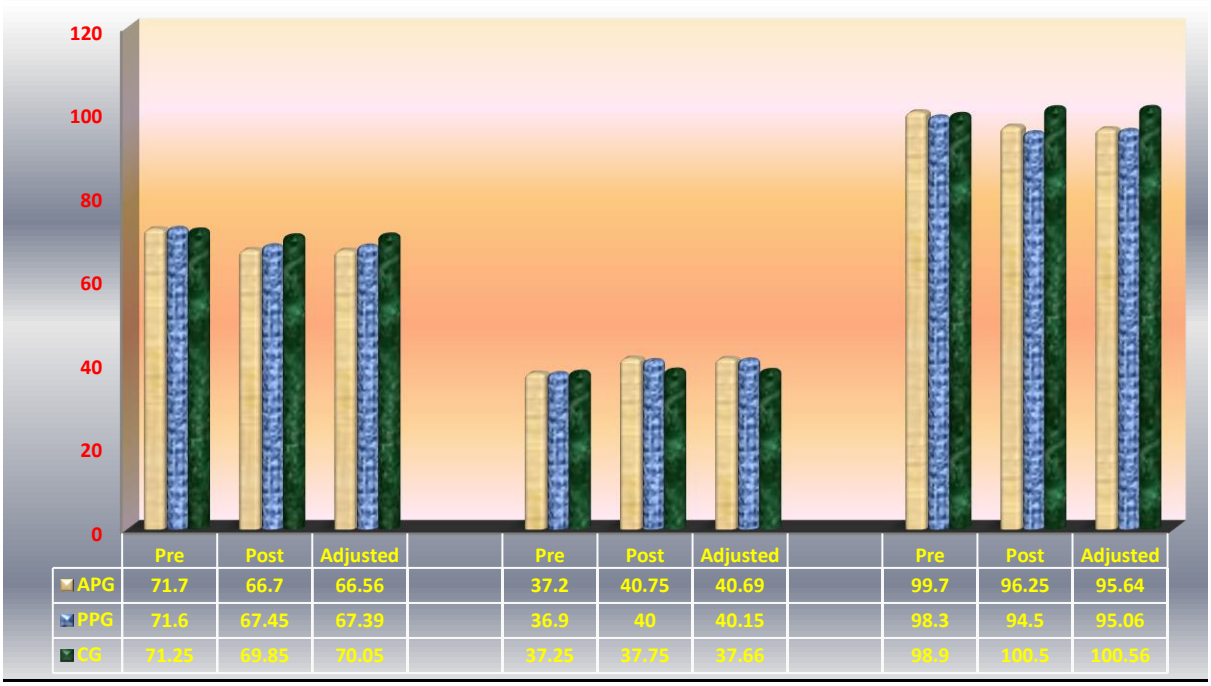
*Significant at 0.05 level of confidence. (Table value with df 2 and 57 and 2 and 56 were 3.16)

The pre, post-test and adjusted post-test mean values of heart rate on asana practices group (ATG) were 71.70, 71.60, 71.25 pranayama practices group (PTG) 66.70, 67.45, 69.85 and control group (CG) 66.56, 67.39, 70.05 respectively. The obtained F value of adjusted post-test were 10.75 was greater than the table value of 3.16. Hence it was proved that there was a significant improvement on heart rate of college men students.

The pre, post-test and adjusted post-test mean values of breathe holding time on asana practices group (ATG), were 37.20, 36.90, 37.25 pranayama practices group (PTG) 40.75, 40.00, 37.75 and control group (CG) 40.69, 40.15, 37.66 respectively. The obtained F value of post-test and adjusted post-test were 6.36 was greater than the table value of 3.16. Hence it was proved that there was a significant improvement on breathe holding time of college men students.

The pre, post-test and adjusted post-test mean values of blood pressure on asana practices group (ATG), were 99.70, 98.30, 98.90, pranayama practices group (PTG) 96.25, 94.50, 100.50 and control group (CG) 95.64, 95.06, 100.56 respectively. The obtained F value of post-test and adjusted post-test were 95.26 was greater than the table value of 3.16. Hence it was proved that there was a significant improvement on blood pressure of college men students.

Figure - I Pre, Post and Adjusted Post Test Means of Asana and Pranayama Practices Group and Control Group on Heart Rate, Breathe Holding Time and Blood Pressure.



	Pre	Post	Adjusted		Pre	Post	Adjusted		Pre	Post	Adjusted
APG	71.7	66.7	66.56		37.2	40.75	40.69		99.7	96.25	95.64
PPG	71.6	67.45	67.39		36.9	40	40.15		98.3	94.5	95.06
CG	71.25	69.85	70.05		37.25	37.75	37.66		98.9	100.5	100.56

Discussion of Findings

The result of the study indicates that the experimental group namely as asana practices and pranayama practices had significantly improved in the selected dependent variables namely as heart rate, breathe holding time and blood pressure. It is also found that the improvement caused by asana practices and pranayama practices was better when compared to control group.

Conclusions

The experimental group's namely as asana practices and pranayama practices had achieved significant improvement on selected The physiological variables such as heart rate, breathe holding time and blood pressure when compared to control group.

It was concluded that asana practices as better improvement when comparing to the pranayama practices groups on selected the physiological variables such as heart rate, breathe holding time, and blood pressure.

It was concluded that college men students should practice both asana practices and pranayama practices for positive enhancement of life.

References

1. Amuthan E. isolated effect of yogasana and pranayama training on selected physiological parameters of school girls. Prospective approaches and application of yoga and physical activity for better life. 2015. 978-81-910811-4-5.
2. Kyizom T, Singh S, Singh KP, Tandon OP, Kumar R. Effect of pranayama & yoga- asana on cognitive brain functions in type 2 diabetes-P3 event related evoked potential (ERP), Indian Journal of Medical Research.
3. Sharma, Dr.P.D.(2011).Text book of Yogasana and Pranayama For Health. Dadar, Mumbai:Navneet Publications.
4. Singh, Hardayal, (1984). Science of Sports Training, Newdelhi: D.V.S Publications, p13. 2010; 131:636-40.