Available online @ www.iaraindia.com
SELP Journal of Social Science - A Blind Review & Refereed Quarterly Journal
ISSN: 0975-9999 (P) 2349-1655 (O)
Impact Factor: 3.655 (CIF), 2.78(IRJIF), 2.5(JIF), 2.77(NAAS)
Volume XVI, Issue 60, January - March 2025
Formally UGC Approved Journal (46622), © Author

IMPACT OF ASANA AND PRANAYAMA ON SELECTED PHYSIOLOGICAL VARIABLES AMONG COLLEGE STUDENTS

M.BASTIN RANJITH
Ph.D. Scholar
Alagappa University College of Physical Education
Alagappa University, Karaikudi.

Dr.D.RAJALAKSHMI
Associate Professor
Alagappa University College of Physical Education
Alagappa University, Karaikudi.

Abstract

The purpose of the study was to find out the impact of asana and pranayama practices on selected physiological variables among college men students. To achieve the purpose of the study, 30 college men students were selected from Bharathidasan University, Tiruchirappalli. The age of the subjects were ranged between 21-25 years. The subjects were equally divided into three groups namely two experimental and one control group. The treatments to the experimental groups were assigned randomly one for Asanas and another for Pranayama and the third group served as control group. The treatment schedule was prepared for twelve weeks. The experimental treatments were employed for 60 minutes a day in five days a week for twelve weeks duration. Pre and post-test data of all the subjects from three groups were collected before and after the experimental treatment period of 12 weeks. The selected variables were Heart Rate and Vital capacity. The data was analyzed by employing analysis of covariance (ANCOVA) at the 0.05 level of significance. The result of the study indicates that practice of both Asanas and Pranayama had significant effect on Heart Rate and Vital capacity of the subjects.

Keywords: asana, pranayama, heart rate, vital capacity and ANCOVA

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.

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. **Sharma, Dr.P.D.(2011).**

METHODOLOGY

The purpose of the study was to find out the effect of asana and pranayama practices on selected physical and physiological variables of college men students. To achieve the purpose of the study, 30 college men students were selected from Bharathidasan University, Tiruchirapalli. The age of the subjects were ranged between 21-25 years. Heart rate and vital capacity are taken as a physiological variable for the study. The standardised tests are used to test the dependable variables namely digital monitor for heart rate and wet spirometer used to test vital capacity. The treatment schedule was prepared for twelve weeks. The experimental treatments were employed for 60 minutes a day in five days a week for twelve weeks duration. Pre and post-test data of all the subjects from three groups were collected before and after the experimental treatment period of 12 weeks. The standardised tests are used to test the dependable variables namely digital monitor for heart rate and wet spirometer used to test vital capacity. The data was analyzed by employing analysis of covariance (ANCOVA) at the 0.05 level of significance. 'F' ratio for adjusted post-test was found to be significant, the Scheffe's post hoc test was used find out the paired mean differences.

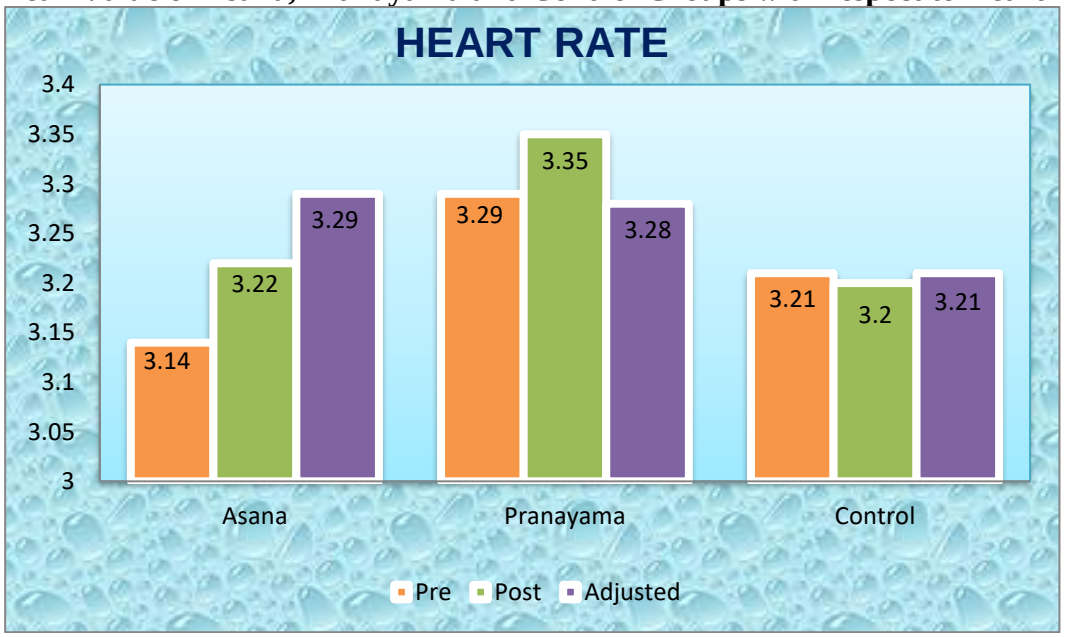
STATISTICAL INTERPRETATIONS AND RESULTS

Table I: Analysis of Covariance for Heart Rate

	Asana	Pranayama	Control	S.V	df	SS	Mss	F
Pre	163	155.43	159.7	Between	2	201.81	100.90	2.93
				Within	28	867.12	48.17	
Post	159.14	152.29	159.1	Between	2	219.43	109.71	1.65
				Within	28	1197.12	66.50	
Adjusted	155.03	154.78	158.8	Between	2	47.46	23.73	**5.22***
				Within	27	77.23	4.54	

*F (2,17) =3.59 F (2,18) = 3.55 *Significant at 0.05 levels*

Fig 1: Mean Value of Asana, Pranayama and Control Groups with respect to Heart Rate



The table-1 of analysis of covariance for heart rate of asana and pranayama and control

group indicated in significant F-ratio of 2.93 and 1.65 for the initial and final test of means respectively. However, the F-ratio for the adjusted final test mean reveal a value of 5.22 which was significant as it was greater than the F-value of 3.59 required for significant at 0.05 levels. This indicates that there was significant difference from the adjusted post test means of Asana, Pranayama and control groups in the Heart rate.

Table-2: Scheffe's post hoc tests mean differences on Heart Rate

Mean			**Mean Difference**	**Confidence interval value**
Asana	**Pranayama**	**Control**		
155.03	154.78		0.25	**3.05**
155.03		158.8	**3.77***	
	154.78	158.8	**4.02***	

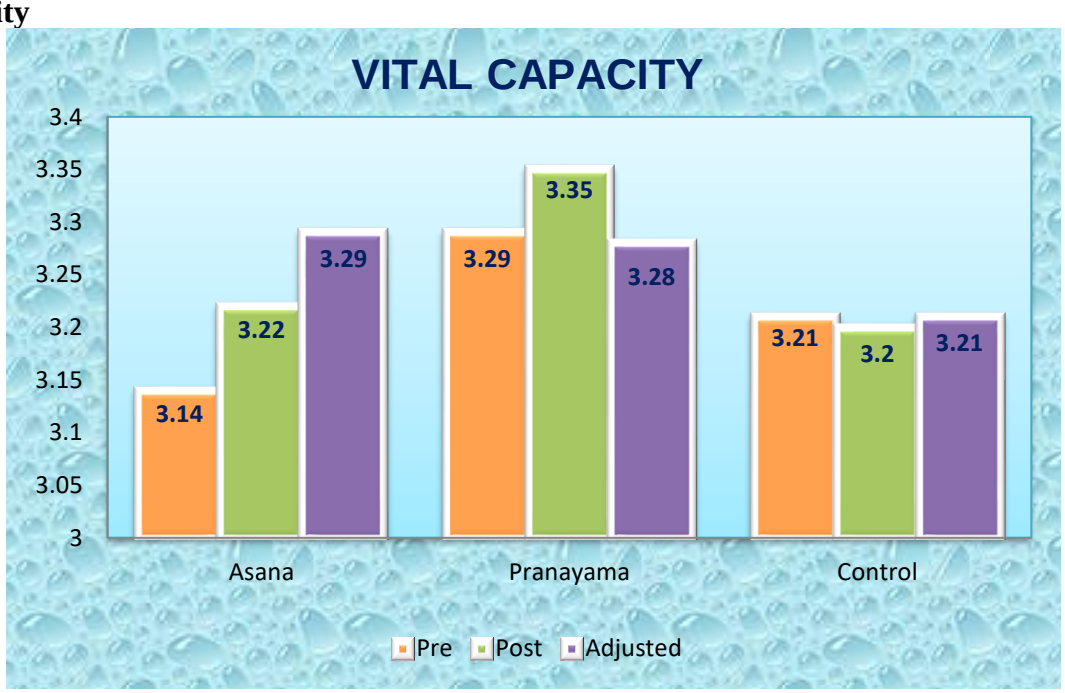
Table-2 indicates that the difference between the paired adjusted final means of asana, pranayama and control groups in heart rate indicated significant value of **3.77*** and **4.02*** which emphasis greater mean gain observed for Asana, pranayama as compared to the control group.

Table 3: Analysis of Covariance for Vital Capacity

	Asana	**Pranayama**	**Control**	**S.V**	**df**	**SS**	**Mss**	**F**
Pre	3.14	3.29	3.21	Between	2	0.07	0.03	2.03
				Within	28	0.32	0.01	
Post	3.22	3.35	3.20	Between	2	0.09	0.04	1.99
				Within	28	0.42	0.02	
Adjusted	3.29	3.28	3.21	Between	2	0.02	0.01	**8.64***
				Within	27	0.02	0.00	

*F (2, 17) =3.59 F (2, 18) =3.55 *Significant at 0.05 levels.*

Fig 2: Mean Value of Asana, Pranayama and Control Groups with respect to Vital Capacity



The table-3 of analysis of covariance for vital capacity of Asana, Pranayama and Control group indicated insignificant F-ratio of 2.03 and 1.99 for the initial test and final test of means respectively. However, the F-ratio for the adjusted final test mean reveal a value of 8.64* which was significant as it was greater than the F-value of 3.59 required for significant at 0.05 level. This indicates that there were significant differences from adjusted final means of Asana, Pranayama and Control groups in the vital capacity.

Table-4: Scheffe's post hoc tests mean differences on Vital capacity

Mean	**Mean**	**Confidence**

Asana	Pranayama	Control	Difference	interval value
3.29	3.28	-	0.01	**0.06**
3.29	-	3.21	**0.08***	
-	3.28	3.21	**0.07***	

Table-4 indicates that the difference between the paired adjusted final means of Asana, Pranayama and control group in vital capacity indicated significant value of **0.08*** and **0.07*** which emphasis greater mean gain observed for Asana and Pranayama group as compared to the control group.

Discussions on Finding

The result of the study it was finding that the asana and pranayama practices are significantly improving the physiological variables namely heart rate and vital capacity. **E. Amuthan (2015)**. Asana and pranayama training will significantly improve the physiological variables.

CONCLUSION

1. Both Asana and Pranayama had significant contributing role over the Heart rate of subjects as a result of twelve weeks asana and pranayama practices.
2. It can be said that the effect of twelve weeks practice of Asana and Pranayama was significant enough to bring about the change in the vital capacity.

REFERENCES

1. **Sharma, Dr.P.D.(2011).**Text book of Yogasana and Pranayama For Health. Dadar, Mumbai:Navneet Publications.
2. **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.
3. **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. 2010; 131:636-40.
4. **Pramanik T.** Immediate effect of Slow Pace Bhastrika Pranayama on Blood Pressure and Heart Rate, Journal of Alternative and Complementary Medicine. 2009; 15(3):293-295.