



EFFECTS OF PRANAYAMA ON VITAL CAPACITY AND BREATH HOLDING TIME OF MIDDLE AGED MEN

E. G. Vidyasagan* Dr. A. Mahaboobjan**

*Research Scholar, Dept.of Physical Education, Karpagam University, Coimbatore Tamilnadu, India.

**Professor & Head, Dept.of Physical Education, Bharathidasan University, Tiruchirappalli, Tamilnadu, India.

Abstract

The purpose of the study was to find out the effect of pranayama on vital capacity and breath holding time of middle aged men. To achieve the purpose of this study 30 subjects were selected. They did not participate in any yoga practice. The age group of the subjects ranged between 35 and 50 years. The investigator reviewed the available scientific literature on the basis of the discussion with the experts, feasibility criteria and availability of the instruments and the relevance of variables to the present study.

The objective of the study was to measure the ability of the subjects to hold the breath for longer time. A stop watch with calibration of 1/10 seconds, score sheets and pencil were used to administer the test. The time of holding the breath till the subjects let the air out was closed by using the stopper to the nearest one tenth of a second as breath holding time.

The objectives of this test were to measure the largest quantity of air, which a person can expel from the lungs by a forcible expiration. A six liters wet spirometer was used to the test. To achieve the purpose of the present study, training programme for experimental group were designed and the control group was not given any training. Only the experimental group underwent practice in pranayama weekly 5 days i.e., Monday to Friday 6.00 AM to 7.00 AM. The result of the study showed that there was a significant difference among pranayama practice group and control group on the changes in breath holding time after the 9 weeks of training. The result of this study also showed that there was a significant improvement in breath holding time after the pranayama practice. These trainings must be recommended to different age group to improve the cardio respiratory system.

Introduction

Breathing is life. It is one of our vital functions. One of the five principles of yoga is breathing exercise which promotes proper breathing. In a yogic point of view, proper breathing is to bring more oxygen to the blood and to the brain and to control prana or the vital life energy. Pranayama also goes hand in hand with the asanas. The union of this yogic principles is considered as the highest form of purification and self discipline, covering both mind and body. As per yoga philosophy longevity depends on your breathing rate. Lowering of breathing rate is likely to increase your life. As a result of breathing, the freshly oxygenated blood travels from lungs to heart. The heart pumps it via arteries and blood vessels to every part of the body, where in turn it seeps in to every tissue and cell. This improves the blood circulation and more oxygen/prana or cosmic energy reaches all parts of body. Pranayama practice provides freedom from negative and harmful mental conditions like anger, depression, lasciviousness, greed of money, arrogance etc.

The word pranayama consists of two parts: prana and ayama. Ayama means stretch, extension, expansion, length, breath, regulation restraint and control. Prana, the the life force or vital energy, is the centre of all yogic practices.

The main objective of the study was to find out the effects of pranayama on breath holding time and vital capacity. On the basis of the literature and research findings it was hypothesized that there may be any significant difference between the breath holding time and vital capacity functions of men practicing pranayama.

Significance of the Present Study

- The result of the study would enhance the awareness of pranayama among the middle aged males.
- Learning such pranayama techniques, the middle age males can have the positive effects in their day- to-day life.
- The study may reveal the importance of pranayama in training working middle aged males.

Methodology

This study was designed to prove the effects of pranayama on selected physiological variables among middle aged men. To achieve this purpose 30 subjects selected. They do not participate in any yogic practices. The age group of the subject ranged between 35 and 50 years. The following variables were selected for the study. Breath holding time and vital capacity.

The reliability of data was ensured by establishing reliability of instruments, tests, subjects and the competency of the tester. The steel tapes, stop watches were used as an instrument for testing. The objective was to measure the ability of the subjects



to hold the breath for longer time. A stop watch with calibration of 1/10 seconds, score sheet and a pencil were used to administer the test.

Vital capacity test was to measure the largest quantity of air, which a person can expel from the lungs by a forcible expiration after the deepest possible inspiration. A six liters wet spirometer is used as the equipment. The wet spirometer was placed at a height that allowed the subjects to stand correct at the beginning of the test. The subject forcefully inhaled and exhaled twice before the test. The subject cautioned not to allow air to escape through his nose or around the mouth piece. The subject at completion should bend slightly forward to blow as much air as possible in to the wet spirometer. The tester should watch the needle to obtain the maximum reading.

Training programme for experimental group was designed and the control group was not given any training. Only the experimental group underwent practice in pranayama weekly 5 days i.e., Monday to Friday 6.00 AM to 7.00 AM. The result of the study showed that there was a significant difference among pranayama practice group and control group on the changes in breath holding time after the 9 weeks of training . The result of this study also showed that there was a significant improvement in breath holding time and vital capacity after the pranayama practice. These training must be recommended to different age group to improve the cardio respiratory system.

Table-I, Training Programme

Yogic Techniques	Duration
Nadisudhi	05 Min (04 Round)
Kabalapathi	05 Min (03 Round)
Ujjayi	05 Min (03 Round)
Bhramari	05 Min (02 Round)

Statistical Technique

The following statistical procedure was done to find out the effects of pranayama on vital capacity and breath holding time of middle aged men. The researcher used Analysis of Covariance (ANCOVA) for interpreting the results as recommended by Clarke and Clarke 33. After eliminating the influencing of pre test, the adjusted post test means of experimental groups and control group were tested for significance by using ANCOVA. If there were any significant difference found, Scheffe's post hoc test was applied. The data were analyzed with the computer using "SPSS" statistical package. The level of confidence was fixed at 0.05 level of confidence.

Breath Holding Time

The data collected pre-test and post-test of control group and pranayama group on breath holding time were analyzed and presented in Table-II.

Table –II. Analysis of covariance on breath holding time of control group and pranayama practice group of middle aged men

Test	Yogic Practice Group	Control Group	SOV	Sum of Squares	df	Mean Square	'F' Ratio
Pre-Test Mean	60.67	60.87	Between	0.30	1	0.30	0.31
Sd	0.90	1.06	Within	27.07	28	0.967	
Post-Test Mean	59.00	61.27	Between	38.53	1	38.53	43.27
Sd	0.76	1.10	Within	24.93	28	0.89	
Adjusted Post-Test Mean	59.04	61.22	Between	35.30	1	35.30	47.31
			Within	20.02	27	0.741	

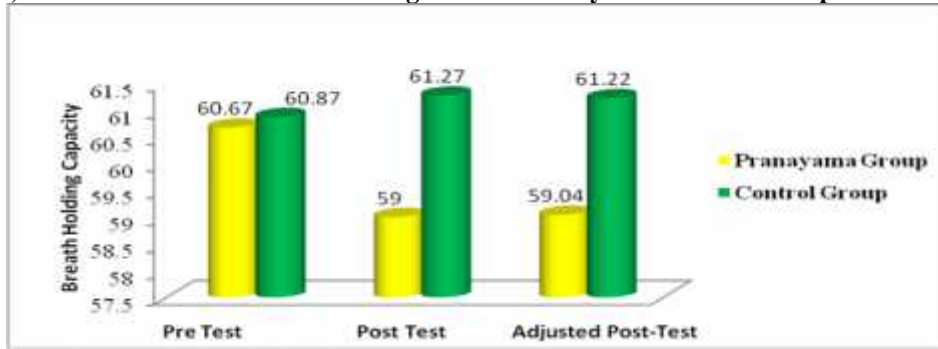
Significant at 0.05 level of confidence

(The table value required for significance at 0.05 level of confidence with DF 1 and 28 and 1 and 27 were 4.20 and 4.21 respectively)

The result of this study showed that there was a significant difference among pranayama practice group and control group on the changes in breath holding time after 9 weeks of pranayama practice. The result of this study also showed that there was a significant improvement in breath holding time after the pranayama practice.



Figure – 1, The Mean Value in Breath Holding Time of Pranayama Practice Group and Control Group



Vital Capacity

The data collected prior to and after the experimental period vital capacity on pranayama practice group and control group were analyzed and presented in Table- III

Table –III. Analysis of covariance on vital capacity of control group and pranayama practice group of middle aged men

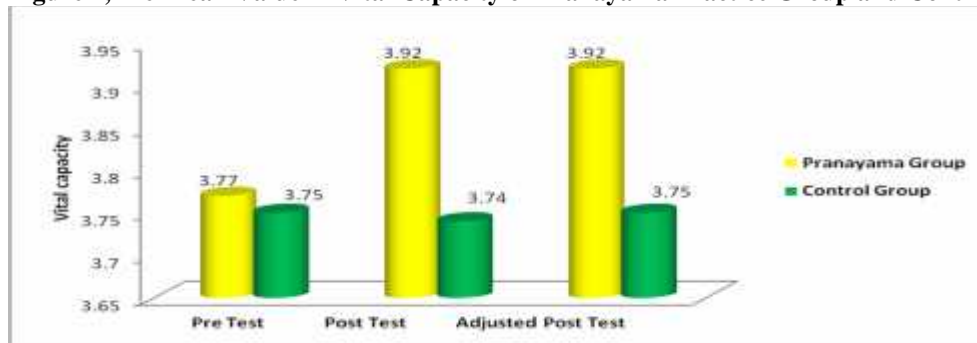
Test	Yogic Practice Group	Control Group	SOV	Sum Squares	df	Mean Square	'F' Ratio
Pre-Test Mean	3.77	3.75	Between	0.0003	1	0.003	0.62
Sd	0.05	0.08	Within	0.136	28	0.005	
Post-Test Mean	3.92	3.74	Between	0.246	1	0.246	56.10*
Sd	0.05	0.08	Within	0.123	28	0.0004	
Adjusted Post-Test Mean	3.92	3.75	Between	0.196	1	0.196	256.13*
			Within	0.021	28	0.001	

Significant at 0.05 level of confidence

(The table value required for significance at 0.05 level of confidence with DF 1 and 28 and 1 and 27 were 4.20 and 4.21 respectively)

The result of the study showed that there was a significant difference among pranayama practice group and control group and the changes in vital capacity after 9 weeks of training. The result of the study also shown that there was a significant improvement in vital capacity after the pranayama practice.

Figure 2, The Mean Value in Vital Capacity of Pranayama Practice Group and Control Group.



Conclusion

It was concluded that pranayama practice group significantly improved on breath holding time of middle age men. There was a significant improvement after the pranayama on breath holding time when compared with the control group. The vital capacity was significantly improved after the pranayama when compared with the control group.

Reference

1. Arunachalam k (madurai; tamilnadu nature cure association, 1976).
2. Gharote M.L Applied yoga (Lonavala ;kaivalyadhama,S.MY M samithii 1990).
3. Harrison Clarke H., Application of measurement to health and physical education (6th Ed) (engle wood cliffs;prentice hall inc., 1976)
4. Swami sathyanandha saraswathi, asana, pranayama, mudra, bandha, bhargava bhushan press varanasi
5. Sharma P .,D yogasana and pranayama for health (gala publishers , 1989 ahamadabad).