

EFFECTS OF SELECTED YOGIC PRACTICES ON VITAL CAPACITY AMONG MALE COLLEGE STUDENTS

A Project work submitted to the
Bharathidasan University, Tiruchirappalli,
in partial fulfillment of the requirements for the award of the
MASTER OF SCIENCE IN YOGA

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APRIL – 2007

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CERTIFICATE

This is to certify that the project work entitled “**Effects of Selected Yogic Practices on Vital Capacity among Male College Students** “. Submitted to Bharathidasan University, in partial fulfillment of the requirements for the award of Master of Science in Yoga, is a record of original project work done by **P. Dakshina Moorthy (Reg. No. P0 5640001)**, during the period of his study in the Yoga Centre, Department of Physical Education, Bharathidasan University, Tiruchirappalli- 620 024. Under my supervision and guidance. The report has not been presented for the award of any degree/ Diploma/ Associateship/ Fellowship/ or other titles to any other candidate of any university. Also certify that the report represents entirely on independent work on the part of the candidate.

Signature of the

Head of the Department

Signature of the Guide

DECLARATION

I hereby declare that the project work report entitled “**Effects of yogic practices on vital capacity among male college students**”. Submitted to Bharathidasan University in partial fulfillment of the requirements for the award of the **Master of Science in Yoga** is a record of original project work done by me, under the supervision and guidance of **Mr. S. Karuna Murthy**, Lecturer in Yoga, Yoga centre, Department of Physical Education, Bharathidasan University, Tiruchirappalli - 620 024 and that the project work has not formed the basis for the award of any other degree , diploma, associateship, fellowship or other titles to any other candidate of any University.

Signature of the Guide

Signature of the Candidate

ACKNOWLEDGEMENT

The project work is the result of the co-operation and support of a large number of people. I am grateful to the Bharathidasan University for starting the Master degree in yoga programme which has helped to study about yogic curriculum in a systematic manner.

I have the proud privilege and pleasure in expressing my deep sense of gratitude to my project guide Mr. S. Karuna Murthy, M.Sc., Ph.D., Lecturer in yoga, Yoga center, Department of Physical Education, Bharathidasan University, for his expert guidance, encouragement, and valuable suggestions throughout the project work.

I am very happy to thank Dr. K. Chandra Sekaran, Head of the Department of Physical Education, Bharathidasan University, for his support through out the course of study.

I Convey my heart full thanks to Mr. R. Kalidasan, Ph.D., Lecturer, Department of Physical Education, Bharathidasan University, for his valuable suggestions and timely help for the successful work completion of this project work.

I convey my thanks to Mr. J. Viswanathan, Ph.D., for his support of the study.

I convey my heartfelt thanks to Dr. T .Seshasayee, Reader, Department of Philosophy, National college, Tiruchirappalli for his interest and helped in time being to approach the students.

I have to convey my heartfelt sincere thanks to participate the students from National college, Tiruchirappalli.

Sincere thanks to Staff members, Department of Physical Education and Yoga center, Bharathidasan University, Tiruchirappalli for their timely help.

I thanks to my classmate Mrs. E. Jayapriya helped me to complete the project work.

I convey my grateful thanks to who are supported directly and indirectly to complete the project work.

Finally I convey my deep heartfelt thanks to always guiding my parents and friends.

P. DAKSHINAMOORTHY

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CHAPTER - I

INTRODUCTION

Human being is a leading personality in the world because of having the sixth sense the discriminating power. Humanity seating on the top of the luxuries life by scientific development but they cannot leading his own mind properly. Because Human doing not understand his own structure and function. Humanity need to realize developing the science and technology. Human mind leading by science because always human being all are behind the science and technology. It leads to restlessness life. Humanity suffering by illness there is no relaxation and pleasure in the life. Suffering by illness at all physical level, emotion level, intellectual level and social level.

What is the remedy to overcome from the suffering. Human mind need to relaxation as well as effective and efficient life style. The ancient Indian heritage yogic life style giving the relaxation, effective and efficient life to humanity. Yoga helps in promoting , preventing, treating and managing the problems at physical level through practicing Asanas, kriyas and yama & niyama, at prana the vital energy level through pranayama, kriyas and pranadharana, at mind level the Meditation Bhajans, Japa and Ajapajapa practice at intellectual level through counselling, lectures, studying the scriptures all level leading to Blissful in soul level. So yogic practices are helps to realize reality of the life.

1.1 YOGA

Yoga is becoming popular in different parts of the world. For the restless mind it is a boon. For a common man it is the fashion of the day to keep himself fit and beautiful some use it for developing memory, intelligence and creativity. With its multifold advantages it is becoming as part of education. Specialists use it to unfold deeper layers of consciousness in their move towards more and more perfection.

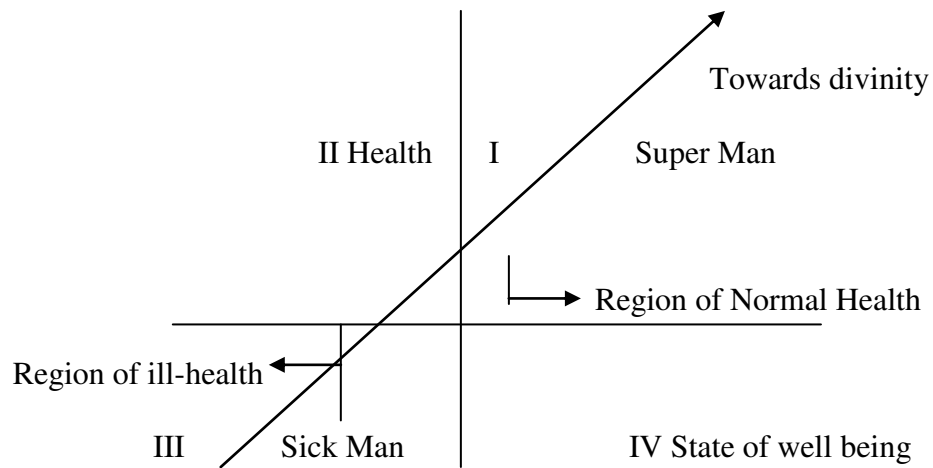
Modern medicine with its scientific approach has saved man from devastating killers and others deadly infection diseases . In this age of computers, medical professionals are challenged by various stress related diseases , the psychosomatic ailments for which they have no cure. Here the Holistic approach of yogic practices is found highly beneficial.

Yoga is the science of mind. It teaches us how to control our minds our desires and other reactions of stress. It is the means to make the mind quit. It helps us to maintain inner peace at all times, in all our actions and promotes physical and mental health. Modern science has realized stress is the root cause of many diseases. And yoga is the answer in this modern era.

According to Patanjali, Yoga is “Chitta Vriitti Nirodhah” “Mastery over the Mind. According to Yoga Vasistha yoga is process trick to calm down the mind “Mana prasamana Upayah yogah”. According to Bhagavad Gita. “Yoga Karmasu Kausalam”. Yoga is dexterity in action. The dexterity is in maintaining relaxation and awareness in action.

1.2 CONCEPT OF HEALTH AND YOGA

According to World Health Organization (WHO) the state of health is defined as a state of complete physical, emotional and social well being not merely and absence of disease or infirmity. WHO also suggest a fourth dimension spiritual health. It is clear from this definition that health and ill health are not two different entities as commonly understood but health should be conceived as a continuous function indicating the state of well being.



Animal Level

In the diagram the III quadrant “ the region of ill – health” represents what normally we designate as ‘sickness’. Below this man acts instinctively and is a kin to an animal man. Coming to the first quadrant, the region of normal man the state of normal health is indicated. As one moves along the line further up, he becomes healthier featured by the dormant faculties expressing more vividly in man. This is shown as the region of super man, the next region after the human spectrum. In this state the limitations or normal man namely the strong urges of thirst, hunger fear and

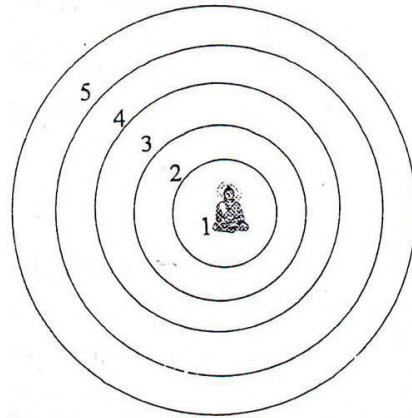
sex are reduced greatly and are fully under control. In the concept of Sri Aurobindo, the faculties of deeper perceptions of the world beyond the five senses emerge in this phase of super human existence. Further growth leads man to unfold even deeper layers of consciousness and wider the spectrum of this personality provoke among move towards divinity or perfection.

Yoga is a systematic conscious process for acceleration the growth of a human being from his animal level to normalcy, then to super human level and ultimately to divinity. It is a systematic methodology for an all round personality development physical, mental, intellectual, emotional and spiritual components of man. Thus yoga in its general methodology for the growth of man to divine heights include techniques useful for holistic approach of yogi practices making man healthiest.

1.2.1 THE FIVE LAYERS OF EXISTENCE

The 'existence' is the reality is in explicable. In order to understand this existence and utilize, one of the very effective expression is given in the form, which is basically and classically, known as Pancha kosa. In the tradition of yoga and Upanishads, there are five sheaths of existence of man. The first and grossest, the physical frame which we are all so familiar is called Annamaya kosa. The second sheath is the Pranamaya Kosa featured by the predominance of prana, the life principle. Though the invisible channels called **Nadis** in this sheath, the Prana flows.

The next sheaths in the order of subtlety are 3) Manomaya Kosa, 4) Vijnanamaya Kosa, 5) Ananda maya Kosa



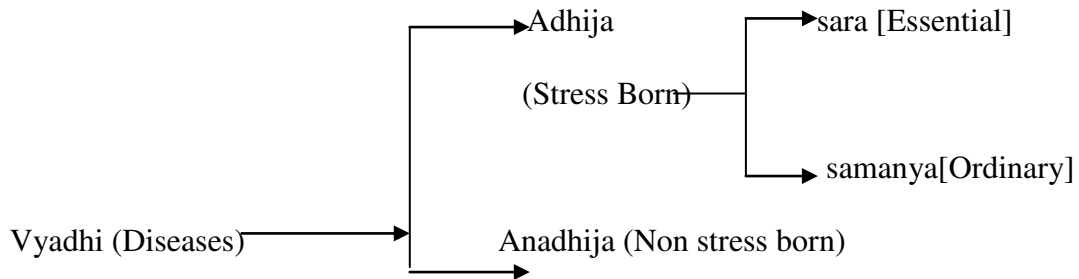
1. Annamaya Kosa
2. Pranamaya Kosa
3. Manomaya Kosa
4. Vijnanamaya Kosa
5. Anandamaya Kosa

The picture indicate Anandamaya kosa as the inner most and the subtler, the freedom of operation in the living being increases, the bondage decreases and the bliss associated with it also increases. While in Manomaya kosa the creative power predominates, in Vijnanamaya kosa it is the power to discern and discriminate. Bliss is embodied in Anandamaya kosa, the highest stage of evolution in the manifested existence. It is the causal among the five sheaths of existence. In this journey towards the ultimate, man crosses these sheaths of existence one by one. Through analysis called “Panca kosa viveka” (knowing through experience his 5 sheaths of existence) and the associated practices called Tapas man transforms himself by gradually methods of reaching the ultimate goal enumerated and described in the Upanisads.

1.2.2 The Science of Illness

In Anandamaya kosa a man is healthiest with a perfect harmony and balance of all his faculties. At Vijnanamaya kosa there are movements, but are channelised in the right direction. As such it is in the Manonmaya kosa level that imbalances start. Likes and dislikes have come to play at this level. These unbalances amplify

themselves resulting in mental illness called “Adhis” . At this stage there are no symptoms at the physical level. Prompted by the perpetual growth of desires, these mental diseases congeal when using plural nonuse only in us , they begin to manifest themselves externally. Gradually they percolate to the physical frame. Preponderance of Ajnana (ignorance or wrong knowledge about his real state of bliss) leads him to perform, wrong actions, as the eating of unwholesome food, living in unhealthy dwellings, doing things at untimely hours, injuries inflicted. Association with the wicked, evil thoughts etc., These breed physical diseases called vyadhis or the secondary diseases.

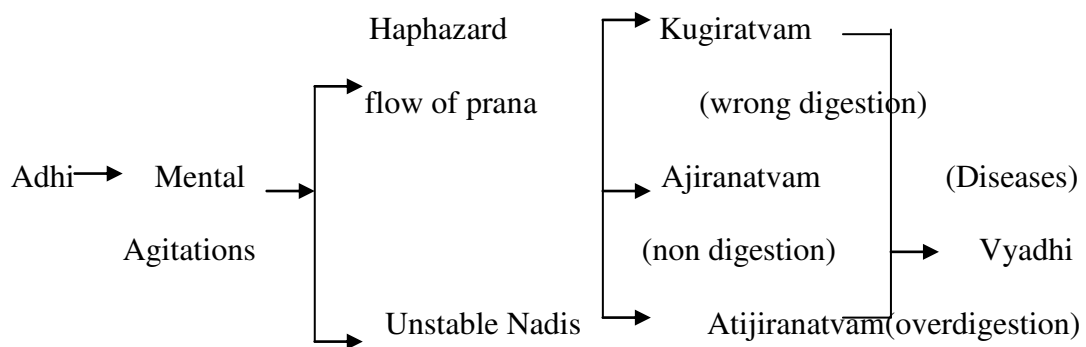


This Adhis primary diseases are two fold – samanya (ordinary) and sara (The essential). The former includes the diseases incidental to the body while the latter the rebirth to which man are subject. The Samanya are normally produced during the interactions with the world. These may be formed as psychosomatic ailments. When dealt with suitable techniques and congenial atmosphere , adhis of this ordinary type will vanish. Along with it are destroyed the physical ailments, vyadhis , caused by these Adhis (Adhija vyadhiyah) The subtler Adhis of the essential of the causal states of mind and a corresponding ability to live in Vijnanamaya and Anandamaya kosas.

1.2.3 THE PSYCHOSOMATIC AILMENTS

When the mind is agitated during our interactions with the world at large, the physical body also follows its wake. These agitations cause also follow its wake. These agitations cause violent fluctuations in the flow of Prana in the Nadis. The Prana flows in wrong paths flying from one to other without rhythm and harmony. The Nadis can no more, in the condition, maintain stability and steadiness, but quicker. Due to these disturbances in the Prana and unsteadiness in the Nadis, the food does not get properly digested.

These arise KUGIRNATVAM (wrong digestion) AJIRNATVAM (Non digestion) and ATIJIRNATVAM (Over digestion). When this improperly digested food settles down in the body amidst such commotion, it results in ailments of the psychosomatic type. The process of Adhi becoming Vyadhi is shown in the figure below.



1.3 THE INTEGRATED APPROACH OF YOGA PRACTICES

All the disturbances in the Manonmaya kosa percolates into the physical sheath (Annamaya kosa) through the Pranamaya kosa. Hence, in the treatment of the psychosomatic ailment it becomes mandatory to work at all these levels of our existence to bring about the quickest results. This approach not only dealing with physical but also using techniques to operate on different sheaths of our existence.

1.3.1 Annamaya Kosa

Kriyas , Physical movements and yogasanas are used to operate at the Annamaya kosa level and to remove the physical symptoms of the ailments.

- **Kriyas:** Kriyas are yogic processes described in Hathayaga Pradhipika to cleanness the inner organs at our body, The six kriyas are Neti, Dhouti, Trataka, Kapalabhati, Nauli and Basti. They bring the following effects. a) Activating and revitalizing the organs. b) Toning up their functions. c) Desensitization and d) Development of deep internal awareness.
- **Yogasanas:** Yogasanas are physical postures , which help in providing deep relaxation Mental calmness , physical dexterity and greater magnitude of benefits.

1.3.2 Pranamaya Kosa

Prana is the basic life principle. Pranayama is a process of gaining control over prana. Through the practice of proper breathing, Kriyas pranayama Bandhas and Mudras. We start operating on the Pranamaya kosa. Suitable types of pranayama and breathing help to remove the random agitations in pranic flows in the Pranamaya kosa. Thus the ailments are handled at this level.

1.3.3 Manonmaya Kosa

A direct operation in this level is made possible by the last 3 limbs of Astanga yoga of sage Patanjali, Dharana, Dhayana and Samdhi. The candle and gain control over the basic cause for mental agitations. We use the yoga techniques to control our emotions. A Devotional session containing prayers, chanting Bhajans, slokas etc, help to build a congenial atmosphere to evoke the emotions is obtained through the devotional sessions. The emotional imbalances and upsurges are eliminated by such control.

1.3.3 Vijnanamaya Kosa

A basic understanding is the key to operate from Vijnanamaya kosa. Upanisads are the treasure of such knowledge which is the redeemer of all miseries and obsession. It is the lack of that inner Jnana which is responsible for many wrong habits, agitation's etc. The happiness analysis – Ananda Mimamsa of the Taittiriya Upanishad handles the most fundamental problem relevant to all living creatures.

1.3.2 Anandamaya Kosa

The analysis systematically leads that substratum from which prana and mind emerge. The Anandamaya kosa. It helps the person to change his attitude of greed and

deep attachment to material possessors and enjoyments towards the realization that happiness is within and 'each one of us' in our causal state is 'Ananda' embodied. As a result, man's outlook in life changes, knowledge burns the strong attachments, obsessions, likes and dislikes which are the basic reasons for the agitation of mind. The sara type of Adhi's can only be removed by this knowledge (Atma – jnana or self realization).

Since by doing yoga, we remove the disturbances and we go back to our natural state, yoga is known as "home coming" yoga is not doing but it is nodding, or from another perspective yoga is not doing, but being. It is a way of life.

Thus yoga forms a very important tool with therapeutic values. Application of yoga at all personality levels is called Integrated Approach of Yogic practices.

1.4 IMPORTANCE OF YOGA

Yoga is a system of attaining perfect physical and mental health. It controls one's senses, resulting in an integrated personality free from stress. It stabilises one's behaviour pattern; develops skills, will power; control the blood cholesterol and helps one to lead a healthy, happy and balanced life.

Yoga is a positive way of maintaining physical and mental alertness and spiritual attainment. Positive changes in the life style of the people can be brought through yoga. During the period of the middle and old age group. Yoga can make them aware of their bodies and further make them realize the need for emotional, physical well being.

1.5 MODERN YOUTH AND YOGA

We are living in the 21st century. The world of science and technology. Our youths also, being this science and technological world. They are thinking this material world alone giving happiness to them. But are they aware this happiness can provide strength and energy?

Youths in any period are dynamic, intelligent and energetic. They are the real source of energy as an individual, society and as a nation. They can do any work. They can make any hard things possible for the welfare of the society. The youths of a nation can change the history of it. The best example is our fight for independence. 300 years of rule of Britishers was removed by the unity of millions of Indian youths. See the selections of the army men. They are selecting the youths only, who can save and safeguard the country with their dynamism. For example the kargil fight. Because of the dynamism, strength, sharp intelligence and energy of our brave soldiers, they were able to defeat the energy and preserve millions of Indians.

Youth have dynamism. But character is very important than anything else. How can one achieve this? Youths are strong physically, physical strength only cannot do everything that we need. Be hard be brave, be heart whole strictly moral. We should have physical, mental and spiritual strength. A mental and spiritual strength can be achieved only by good character. Where there is purity and character there will be energy and where there is impurity there will be weakness.

Here is the importance of the study of scriptures and Yogic practices . Our scriptures and yogic practices inspire us to walk on the path of dharma and help us to build good character. All the religion and philosophy teaches in the same way to follow dharma. For example, the command mends advising the people what to do and what

not do. But the peculiarity of our scripture is that, they tell us scientifically why one should follow the path of dharma.

Modern youth for each and everything going behind scientific proof. He is working whole day like a machine in the technological world. He is not aware about his own self. He is very fast and sharp intelligent and very dynamic. But his works are all confused with stress and tension. He is unable to understand his own path, his goal of this life. Because of this stressful life style he will be suffering from different psychosomatic diseases. Here the study of yoga can help him to lead a life of peace and harmony. Our scriptures tell us how to realize the individual self and at the final stage the supreme Brahman which is the ultimate goal of human life. Though yoga studies one can build up good character based on spirituality, which is the essence of Indian culture. The yoga teach the power of energy lies in the man and how to manifest that energy. The yoga teach us how to purify ourselves, how to purify, our citta. Citta is the source of energy. By the purification of citta energy can be channels in a proper way. This purified mental strength is character.

This is proverb

When Wealth is Lost, Nothing is Lost.

When Health is Lost, Something is Lost.

When Character is Lost, Everything is Lost.

So citta suddhi, Purificatin of heart is very important. When citta is purified, the person becomes calm and quiet and will maintain always the stare of silence. From silence all creativity knowledge and freedom emerges.

From the silence-the abode of peace, which can be gained by the study and practice of yoga our youth can bring the mother world to the pinnacles of its glory.

1.6 VITAL CAPACITY

Vital capacity is one of lung capacity measuring in lung physiology aspect Clarke defined vital capacity as the largest volume of air that can be exhaled after the deepest possible in halation.

According to shaver “vital capacity is the maximal volume of air that can be forcefully exhaled from the lungs following a maximal inspiration”.

The volume of the air that can be made to pass in to and out of the lungs by the most forcible inspiration and expiration is termed the vital capacity of the lungs.

The total air capacity of the lungs is 4,500 to 5,000 ml or 4 ½ to 5 liters of air, which is inspired and expired in ordinary quiet breathing. Vital capacity is important to the positive health. By practice of yogic practices helps to maintain the vital capacity at the optimum level for positive health.

1.7 STATEMENT OF THE PROBLEM

The purpose of the study was to find out the effects of selected yogic practices on vital capacity among male college students.

1.8 HYPOTHESIS

There may be significant difference in the vital capacity of the male college students through yogic practices.

1.9 SIGNIFICANCE OF THE PROBLEM

The study might throw light on whether yogic practices might cause desirable changes on vital capacity among college male students.

1.10 DELIMITATIONS

- The subjects were selected randomly from National College, Tiruchirappalli.
- The study was delimited to the age group ranging from 19 to 26 years.
- The study was conducted on thirty students only.
- The physiological variables vital capacity was selected for this studies because it is more appropriate.
- Selected yogic practices trained for 15 days only for one hour.

1.11 LIMITATIONS

This study limited in the following aspects and these limitations should be taken into consideration while interpreting the results.

- The subjects daily activities were not controlled.
- The diet of the subjects was not controlled.
- The uncontrollable changes in climatic conditions such as atmospheric temperature, humidity and other factors during the period of testing were considered as delimitations.

1.12 DEFINITION OF THE TERMS

YOGA

According to swami Kuvalayananda, “Yoga has a complete message for the humanity . It has a message for the human body. It has a message for the human mind. And it has also a message for the human soul”.

According to swami satyananda saraswati. “yoga is not an ancient myth buried in oblivion. It is the most valuable inheritance of the present. It is the essential need of today and the culture of tomorrow.

According to sage patanjali swami Vishnu devananda defines yoga as “The suspension of the modification of the thinking principles which is obtained through different methods such as controlling the vital breath and steady nose both of which are intimately connected with mind.

VITAL CAPACITY

Vital capacity is the maximal volume of air that can be expelled from the lungs by a force full effort after a maximal inspiration.

YOGIC PRACTICES

Yogic practices means which one develops physical, mental and spiritual wellness. Yogic practices are

- 1.Yama and Niyama, attitude training
- 2.Asanas or postures
- 3.Pranayama, the control of breathing process
- 4.Bandhas and Mudras, locks and holds of different parts of the body
- 5.Kriyas, the purificatory processes, of which there are six classes.
- 6.Meditation, of which there are a variety of methods

CHAPTER - II

REVIEW OF RELATED LITERATURE

The research scholar had come across several books, periodicals, journals and unpublished thesis, while searching of relevant facts and findings that are related to this

Present study. Such of those facts are given below for a better understanding and to justify the study.

A study of relevant literature is an essential step to get a good comprehension of what has been done with regard to the problem under study. Such a review will bring in a new insight and will help the development of research procedure.

A study of relevant literature is an essential step to get a full picture of what has been done with regard to the problem under study. Such a review brings about a deep and clear perspective of the overall field.

Pandit shiva Sharma and Kailash Nath Sharma (1973) opinion that the Asanas are physical Exercises enabling the body to be physically fit. These exercises in physical education play an important part in helping the pupils to maintain a slim and youthful body. The most important point to realize before starting the practice of yoga is that the Asanas are simple exercise but sustained scientific pattern of postures.

Narinthar Nath Mall (1983) found Savasana – a yoga relaxation method to be of great utility in reducing the heart rate, systolic and diastolic pressure of all the four recovery techniques.

K.S.Gopal et. al. (1975) have presented data concerning finger blood flow in various practices of Hatha yoga. Gopal's measurements were of two groups, each with fourteen male subjects; one group had been trained in Asanas and Pranayamas for at least six months. While the other group has no yoga training but took long walks and played light games regularly. Wenger's data, from yoga students who had practiced yoga regularly for more than two years in the ashram at Kaivalyadha, Lonvala, India, proves that practicing Hatha yoga improves finger blood flow.

V. Hubeert Dhanaraj (1974) studied the effects of yoga and the 5 BX fitness plan on selected physiological parameters. The results indicated an increase in basal metabolic rate, tidal volume in basal state, T-4 thyroxin, hemoglobin, hematocrit, blood cell count, PWE 130, vital capacity, chest expansion, breath holding time and flexibility after yoga training. Decreases in heart rate in basal state were also observed.

M.Robson(1974) studied the effect of yoga on flexibility and respiratory measures of vital capacity and breath hold time. His major conclusion was that both flexibility and vital capacity can be improved by yogic exercise.

James Mc Carthy (1969) keeping aside its spiritual aspects, yoga has now been applied as an out-time practice for the physical and mental fitness. James in another study says that "Yoga is a way of life which can be practiced by any human being regardless of age, condition of health, religion or nationality, for it is based on general physical and spiritual laws which operate on all mankind alike".

Indira Devi et. al. (1967) the aim of yogic Asanas are not only to develop the muscles and the body but mainly to regulate the proper activities of all Internal organs and glands to effect the nervous system and that which controls our well being to a much greater than we actually suppose.

S. Rao (1968) compared the vital capacities obtained in two different body positions with six healthy medical college students of the armed force medical college, Poona India. The results indicated that vital capacity was maximum while standing erect minimum while in the inverted or headstand position.

Katch et.al (1978) investigated the differences, in actual and predicted vital capacity and residual lung volume in sixty three male subjects who were classified as either large, medium or small using a sizing technique based on weight and height. Criterion vital capacity and residual volume were significantly different ($p < 0.05$) between the three different groups of subjects (small, medium and large). When attempting to predict vital capacity or residual volume from height, weight, density, body mass, percent fat, chest growth and age the standard error of prediction ranged from 11 percent for vital capacity and 17 to 19 percent for residual volume. An average increase of 157ml in vital capacity and of fifteen seconds in breath holding time were observed in Wales after three weeks of training in yogic physical culture as recommended by national fitness corps programmes.

M.V.Bhole et.al (1983) concluded that vital capacity was significantly increased from 3,399ml to 3,443ml. In a group of twenty four adult males undergoing

training in Yogic physical culture for three weeks in comparison to the increase from 3095ml to 3,132ml. in the control group.

Joshi(1981) conducted “Effect of Kapalabhati on Retention of Breath an Experimental Study:, presents scientific objective proof and measurement of a fact well recognized in the field of yoga and already studied in our Scientific Research Department that the duration of kumbhaka is significantly prolonged when it is preceded by kapalabhati.

This paper is thus helpful to persons interested in pranayama with an indication about a method of prolonging the kumbhaka, which is considered as most important phase of pranayama. His study on the part of kapalabhati practice and that three part of kapalabhati practice and that the various results are given in the tables type.

In the result of the study showed in, experiment is given retention of breath is seconds. Significant of difference between the first, second and third retention as shown by values. Influence of kapalabhati retention of breath shown by travels. These experiment shows that kapalabhati increase the extent of retention of breathe, and that the increase is highest in case of the immediately following retention.

Sahay (1981) conducted a study on “Some considerations about the pranayama in Patanjali yoga sutras”. He discuss in very great details and in a very studied manner the whole topic of pranayama as presented very briefly in the five sutras in Patanjali

yoga sutras related to this topic. It puts some new interpretations for consideration of the students of yoga sutras.

In this research on actually present in the sutra and its vyaśbhāśya and accepting gāticcheda as alternation in the rhythmicity the three varieties of pranayama are

- Bahya vrtti
- Abahyantra vrtti
- Stambha vrtti

The varieties of pranayama practice of prolongation of suspension can be introduced either after inhalation or after exhalation or even after both in one single cycle.

M.V. Bhole (1982) in his pilot study was carried out of “Effect of yogic treatment on various Lungs Functions of Asthma Patients is concerned with Different groups of patients.

The author are investigated various such respiratory volumes and functions as affected by asthmatic condition and as altered the treatment of yoga for asthmatics. Since the populations of patients and the period of treatment in two cases were different, the results show slight variation in their effect degree. The author conclude that an improvement in the respiratory functions and volumes after the yogic treatments.

From the present study it can be said that yoga treatment for six weeks influenced the order of different values operating in the asthmatics.

Aesthetic value was lowest in both the groups. Four values showed as equal contribution in the total value system and most of the changes showed a tendency to come back to original level indicating thereby the importance of the continuation of yoga practices in order to have permanent changes in the value system of the patients.

The studies were conducted on 22 asthmatics of either sex undergoing yogic treatment for six weeks.

Simple asanas, Pranayamic breathing and cleansing processes were included in yogic treatment programme. After yogic treatment shows dispersion of the values which is very well seen in the case of thermals.

The author comparison the values before and after treatment did not show significant difference in respect of the following parameters.

- i. Tidal Volume
- ii. Expiratory Reserve volume
- iii. Inspiration Capacity
- iv. Twos rage Vital Capacity and
- v. Timed vital capacity for one second

The values for the following parameters were keys before yogic treatment in comparison to the values obtained after adrenalin injection functions after yogic treatment.

- i. Minute ventilation
- ii. % Predicted vital capacity
- iii. Air velocity index
- iv. Time & Vital capacity for two seconds
- v. Maximum breathing capacity
- vi. % Predicted maximum breathing capacity
- vii. Maximum breathing capacity/vital capacity ratio
- viii. Minimum ventilation corrected to B.S.A

Already we known as respiratory rate was more than the normal range of 15 to 18 per minute in health adults.

M.V.Bhole (1978) is study the paper “Comparative Study of Minute Ventilation and Tidal Volume is Deep and Pranayamic Breathing”. He is an important contribution for understanding the significances of pranayama.

He taken the ten subjects in age group of 20 to 25 were given training in deep and Pranayamic breathing for four months so that they could realize the difference in the two modes of breathing and could perform them for six months.

In concluded this study Expiration being prolonged than the phase of inspiration and with than the phases of retentions of breath after inhalation and exhalation, the

Carb dioxide levels in the blood can very easily increase in any type pranayama breathing without other metabolites increasing in the body because of relaxed conditions of muscles.

Karambelkar et. al (1982) , present the paper “ Some Respiratory Studies in Respect of Kapalabhati and Voluntary Hyper – Ventilation” , shows that kapalabhati which seems very much like a voluntary ventilation differ from it in the depth of breathing and carb dioxide wash out . Minute ventilation is increased above the normal, but not to that much extent as hyper – ventilation.

The studies were conducted on eight males who were well-versed in different yogic practices including kapalabhati and were practicing the same everyday over one year. The result of this paper also reveals the nature of kapalabhati as a purificatory practice in relation to respiration and the blood gas content.

Desphande et.al. (1982) present the paper “The Effect of Kapalabhati on Some Constituents of Blood – A Preliminary Study”. It is seen that even after one minute practice of kapalabhati the red cells in the blood are significantly increased. The study was carried out on three batches of 15 samples. The kapalabhati practices for different time intervals in a comfortable sitting postures.

The result of that practices while blood cells are also increased by kapalabhati which go on becoming more and more up to 3 minutes of the practices. These are beneficial changes and their mechanism has been discussed in detail by the authors.

Karambelkar et.al. (1983) the present of the paper “Composition of Expired Air in Pranayamic Breathing and Exploratory Study”- they presents the results about the composition of the air breathing out in Ujjayi and Bhastrika types of pranayama. The single samples of expired air after a certain number of rounds of the particular pranayama were collected individually in one single expiration.

Ganguly et.al (1985) through their studies on the “Influences of Breathing on Flexibility”. Flexibility is one of the Test Items in Physical Fitness Studies. Even in common language we hear people. This flexibility could be at physical Fitness Studies. Even in common language we hear people. This flexibility could be at physical, mental and for intellectual level of any individual. Flexibility is better in exhaled condition has been shown by the inventors. They have referred to some of the yoga techniques which are performed in exhaled condition.

From the present studies it could be included that flexibility is better after expiration while extension is after inspiration. When games and sports emphasis inspired condition for action some of the important yoga techniques like Uddiyana. Nauli etc., are practiced in expired condition.

The study at the end of about pranayama we shall underline that the breathing mechanism is very delicate and that is why all national climatic and individual characteristics should be taken into consideration in determining the number of exhaling and inhaling movements. Since each irresponsibility can load to tragic results.

Kesari et.al. (1979) shows the beneficial results of the paper, Effect of Yogasana and Pranayama on Urea – Clearance and Creatinine – Clearance. The effect of these yogic practices on kidney function, which again is indication how the yogic practices can contribute to a better health due to an efficient working of this most important organ of excretory system.

Conclude and result of this study. Increase in creatinine and urea clearance values in the group performing yogic practices and unchanged values in the group performing non yogic exercises clearly show that there is better functioning of the kidneys in those undergoing yogic practices. Yogic exercises clearly show that there is better functioning of the kidneys in those undergoing yogic practices.

John Mestan et.al. (1979) conducted “Cardiac Output in Normal, Deep and Ujjayi Breathing Shows the Superiority of Ujjayi type of Breathing” not involving any breath holding over the deep breathing with the same time duration of inspiration and expiration. The hearth beats have actually come down with increased heart – out put in Ujjayi breathing as compared to both deep as well as normal breathing. This shows that in Ujjayi the work loads on the heart is lessened and yet more efficiency is obtained.

Conclude this study, during Ujjayi breathing without retention of breath, the cardiac-out put increases while heart rate decreases in comparison to deep breathing of similar time ratio for inspiration, expiration. The characteristic features of Ujjayi are expected to be responsible for this effect.

With the available literature collected by the researcher on the chosen area the study was contacted on interepted for scientific conclusions.

Karambelkar et. al. (1984) present the “Composition of Expired are before and after Kapalabhati”. It shows that increased oxygen and lowered CO₂ levels in expiration of kapalabhati breathing continue to be same during subsequent restful breathing for a long time is even up to 16th to 20 such breaths.

The conclude of tests within the Limitations of the present study it could be said that the changes brought about in gaseous exchange and homeostatic mechanisms of the body during 120 strokes of kapalabhati continue for the subsequent 16 breaths and system gets normalized 5 mins, after the practice is over.

CHAPTER - III

METHODOLOGY

This chapter gives a detailed account of the methodology adopted for a purpose of the study. This research study was designed to ascertain whether the yogic practices improve the college students in having more vital capacity.

3.1 SELECTION OF THE SUBJECTS

The subjects for the study were 30 male college students age ranged between 18 to 26 years from National College, Tiruchirappalli.

3.2 EXPERIMENTAL DESIGN AND TREATMENT

Thirty male students of National college Tiruchirappalli were selected randomly as subject and their age ranged from 18 to 26 years. The subjects were divided into two equal groups randomly, in which each group consisting of fifteen subjects.

Two group designs were used.

Group I Experimental group	Yoga practice group
Group II Control group	No Specific Training / Conditioning

The experimental treatment was administered for period of three weeks, five day for a week, one session each day and each session lasted one hour. The yoga practice schedule

was specially designed to improve the vital capacity and fitness level of the students. This package was administered for experimental group – Group I , Group II – Control group was not exposed to any specific training / conditioning.

3.3 SELECTION OF THE YOGIC PRACTICES FOR THE STUDY

The following yogic practices were administered for the group I [Experimental group]. The yogic practices are

YOGASANAS

- Pavana Mukthasana
- Sethu bandhasana
- Cakrasana
- Bhujangasana
- Dhanurasana
- Pascimottanasana
- Ustrasana
- Vakrasana
- Padahasthasana
- Ardha cakrasana
- Vrksasana
- Sarvangasana
- Halasana
- Matsyasana
- Shavasana

PRANAYAMAS

- Kapalabhati [preparatory]
- Sectional Breathing
- Bhastrika pranayama
- Nadi shuddhi pranayama
- Sitalai & Sitkari Pranayama
- Bhramari pranayama

3.4 SELECTION OF THE VARIABLE

The vital capacity was selected as variable for study. Vital capacity as the largest volume of air that can be exhaled after the deepest possible inhalation. It is one of the lung capacities measuring in lung physiological aspect.

3.5 SELECTION OF TEST

To Measure vital capacity peak flow meter was used. Which selected as test for this study.

3.6 TEST ADMINISTRATION

3.6.1 Purpose

To measure the vital capacity.

3.6.2 Instrument

Peak flow meter was used to measure the vital capacity. It consists of a caliber with measuring scale. In the scale measuring up to 800 points. The mouth piece is separately we can manage for the purpose of the hygiene management.

3.6.3 Procedure

- 1) Peak flow meter given to the subject and allowed to stand erect at the beginning of the test. Before that demonstrated by the investigator to the subject.
- 2) To ask the subjects forcefully inhaled and exhaled twice before taking the test.
- 3) Care was taken by the subject so that the air did not escape through the nose or around the mouth piece.
- 4) Ask to the subject inhale deeply keep the peak flow meter in the mouth immediately and force fully flow the air into the peak flow meter caliber.
- 5) Using the peak flow meter as describe by the proper method explain by peak flow meter producers and experts.
- 6) PFR machine caliber should be in Horizontal position. Not touch the finger on the scale and do not black the caliber edge.

3.6.4 Scoring

Peak flow meter measures the peak Expiratory flow Rate [PEFR] or Peak flow Rate [PFR] . Peak flow meter shows the measurement in Liters per minutes shortly L/mins. Measuring up to 800 L/mins. Three times recorded the score for each subject and taken the highest value into the collection of the data.

3.7 STATISTICAL TECHNIQUE

For the purpose of testing the significance of the difference between the means of the two groups the 't' ratio was used in this study.

CHAPTER - IV

ANALYSIS AND INTERPRETATION OF DATA

The Statistical analysis, the findings discussion on results and hypothesis were presented in this chapter. The data pertaining to the variable using 't' ratio. The level of significance was fixed at 0.05 level of confidence.

4.1 ANALYSIS OF THE DATA

To analysis the collected data, the statistical tool mean, standard deviation and t. test was used in this study.

TABLE - I

Computation of mean and standard deviation.

Group		Standard Deviation	Mean
Experimental Group	Pre Test	477	± 44.1534
	Post Test	504.67	± 48.872
Control Group	Pre Test	452	± 55.45
	Post Test	448.67	± 58.17

The mean value and standard deviation for experimental group for pretest 477 (± 44.1534) and for post test 504.67 (± 48.872) . In control group mean and standard deviation for pre test 452 (± 55.45) and for post test 448.67 (± 58.17). The vital capacity PFR values of experimental and control groups are pictorially presented in fig. 1.

Presentation of the mean value of Experimental group and control group

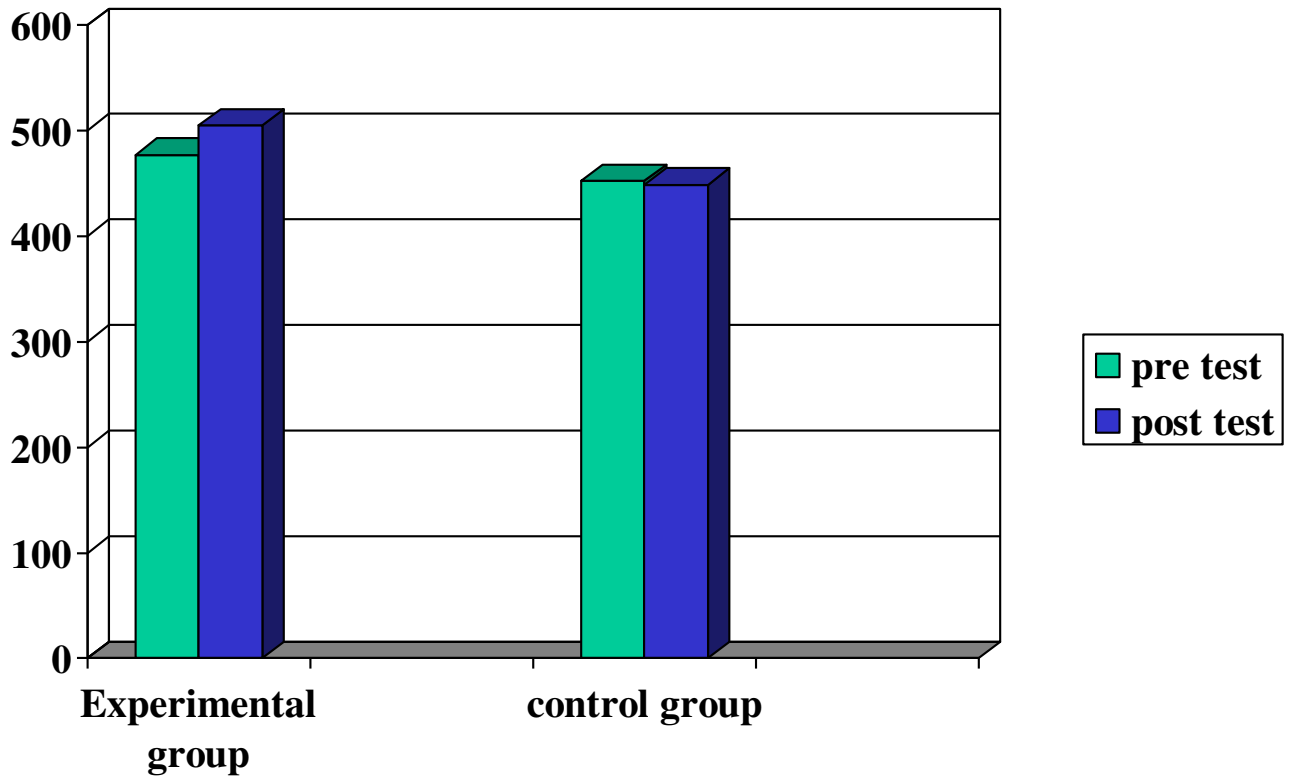


Fig . 1

TABLE – II

Computation of 't' ratio of Experimental group and Control group

Group		Mean	Std.error of the Mean	't' ratio	Fixed Table Value
Experimental group	Pre test	477	11.4004	2.872*	2.145
	Post Test	504.67	12.4161		
Control Group	Pre Test	452	14.32	1.384	2.145
	Post Test	448.67	15.02		

***significant at 0.05 level of confidence**

The mean, standard and error of the mean of vital capacity of experimental and control groups are presented in the above table. The computed 't' value of experimental group 2.872 was greater than the table value of 2.145 at 0.05 level of confidence.

Hence there was significant difference in vital capacity between pre and posttest. When pre and posttest vital capacity scores are compared in control the obtain t value of 1.384 was less than table value of 2.145, which reveals that there was no significant difference.

4.2 DISCUSSION ON FINDINGS

The result of the studies indicates that selected yogic practices have showed significant effects on vital capacity among male college students. Hence, three weeks of yogic practices showed considerable improvement in vital capacity among male college students in experimental group. At the same time control group showed no improvement in vital capacity.

The results of the study was in conformity with the findings of proved by M.V.Bhole et.al. (1983).

4.3 DISCUSSION ON HYPOTHESIS

The analysis of the data indicates that selected yogic practices had significantly effects vital capacity of the male college students. It also shows that the vital capacity was increased after the yogic practices. Here the investigator hypothesis was accepted.

CHAPTER - V

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 SUMMARY

Yoga has a complete message for the humanity. It has a message for the human body. It has a message for the human body. It has a message for the human mind. And it has also a message for the human soul. The purpose of the study was to find out the effects of selected yogic practices on vital capacity among male college students. The subjects for the study were 30 male college students age ranged between 18 to 26 years from National college, Tiruchirappalli. The subjects were divided into two equal groups randomly, in which each group of design was used. Group I the experimental group (yoga training group) and group II control group (No specific training / conditioning) The Experimental treatment was administered for period of three weeks, five day a week, one session each day and each session lasted one hour. The yoga practice schedule was specially designed to improve the vital capacity and fitness level of the students. This package was administered for experimental group. Group II was not exposed to any specific training / conditioning. The vital capacity was selected as variable for study. For the purpose of testing the significance of the difference between the means of the two groups the 't' ratio was used at 0.05 significance level of confidence.

5.2 CONCLUSION

The result of the study indicates that selected yogic practices have showed significant effects on vital capacity among male college students. At the same time control group showed no improvement in vital capacity.

So project study concluded that three weeks of selected yogic practices significantly improve the vital capacity among male college students.

5.3 RECOMMENDATIONS

The project worker has suggested the following recommendations for future work.

1. Similar study may be conducted for female college students, students at school, college and higher education students.
2. Similar study can recommend to the Asthmatic patients and respiratory illness persons.
3. Same study can execute for schoolteachers, college lectures, drivers, conductors, factory employees, executives, farmers, and so on.
4. Same study can recommended to various sports practitioners.
5. Same study can recommend to various psychological level problems.
6. The same study can proceed for long period.

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APPENDIX - I

Vital capacity scoring for Experimental group in PFR Value.

Si.No	Age	Pre Test	Post Test
1.	22	450	490
2.	22	500	540
3.	26	510	530
4.	24	500	510
5.	21	490	520
6.	19	540	590
7.	22	530	570
8.	23	470	470
9.	19	380	410
10	19	450	490
11.	20	460	490
12	21	500	530
13.	20	400	420
14.	22	480	500
15.	22	500	510

APPENDIX - II

Vital capacity scoring for control group in PFR Value.

Si.No	Age	Pre Test	Post Test
1.	19	440	450
2.	20	430	420
3.	20	400	400
4.	19	470	460
5.	20	480	470
6.	21	490	500
7.	20	400	400
8.	19	390	380
9.	23	410	400
10.	20	400	410
11.	24	420	400
12.	19	450	450
13.	24	520	510
14.	21	590	600
15.	25	490	480
