



Minor Research Project

In Physical Education

Entitled
**“A Comparative Study of Effect of
Pranayama Exercises & Endurance
Exercises on Heart & Lungs Capacity”**

Submitted to

**The Joint Secretary
UGC (Western Regional Office),
Ganeshkhind, Pune**

UGC Reference No.: File No.:23-760/09 (WRO)

Dated: 20 August 2009

By
Dr. Pradeep Nagnath Deshmukh
(B.Sc., M.P.Ed., M. Phil, Ph. D.)

**Head, Department of Physical Education & Sports
Smt. Sushiladevi Deshmukh Senior College, Khadgaon Road,
Latur – 413 531 (M.S)**

Manjara Charitable Trust's
**SMT. SUSHILADEVI DESHMUKH SENIOR
COLLEGE, LATUR**

Khadgaon Road, Latur (Maharashtra State) 413531

Phone & Fax No. 02382-221524 Cell : 09423345827, 08698140000 Email : sds.college@yahoo.in

(Affiliated to : Swami Ramanand Teerth Marathwada University, Nanded)

Hon. Dillipraoji Deshmukh(MLC)
President

Dr. Ajay Patil (M.A.,Ph.D.)
Principal

SSDSCL/GC/2015-16/

Dt. 14/10/2017

To,
The Joint Secretary
UGC – Western Regional Office,
Ganeshkhind,
Pune.

Subject: Submission of Minor Research Project Completion Report in Physical Education

Reference: UGC-WRO, Pune file No: 23-760/09/WRO, DATED 20 August 2009.

R/Sir,

With reference to the subject cited above, UGC-WRO Pune approved the Minor Research Project entitled “**A COMPARATIVE STUDY OF EFFECT OF PRANAYAMA EXERCISES & ENDURANCE EXERCISES ON HEART & LUNGS CAPACITY**” in the subject- **Physical Education** has been completed by **Dr. Pradeep Nagnath Deshmukh** in the Head, Dept. of **Physical Education**. The MRP research work has been submitted to you along with the enclosed documents for your perusal.

You are requested to accept the same and oblige us.

Thanking you.

Sincerely Yours,

Manjara Charitable Trust's
**SMT. SUSHILADEVI DESHMUKH SENIOR
COLLEGE, LATUR**

Khadgaon Road, Latur (Maharashtra State) 413531

Phone & Fax No. 02382-221524 Cell : 09423345827, 08698140000 Email : sds.college@yahoo.in

(Affiliated to : Swami Ramanand Teerth Marathwada University, Nanded)

Hon. Dillipraoji Deshmukh(MLC)
President

Dr. Ajay Patil(M.A.,Ph.D.)
Principal

SSDSCL/GC/2015-16/289/01

Dt. 10/10/2017

To,
Director
Board of College and University Development,
Swami Ramanand Teerth Marathwada University,
Vishnupuri,
NANDED.

**Subject: Submission of Minor Research Project Completion Report in
Physical Education**

Reference: UGC-WRO, Pune file No: 23-760/09/WRO, DATED 20 August 2009.

Sir,

With reference to the subject cited above, UGC-WRO Pune approved the Minor Research Project entitled "A COMPARATIVE STUDY OF EFFECT OF PRANAYAMA EXERCISES & ENDURANCE EXERCISES ON HEART & LUNGS CAPACITY " in the subject – **Physical Education** has been completed by **Dr. Pradeep Nagnath Deshmukh**. The MRP research work has been submitted to you along with the enclosed documents for your perusal.

You are requested to accept the same and oblige us.

Thanking you.

Sincerely Yours,

Enclosed:

1. Audited Utilization Certificate in prescribed proforma.
2. Statement of Expenditure in prescribed proforma.
3. Annexure III, IV, V, VI, VIII Duly filled in prescribed proforma.
4. Final Report of the MRP Work.
5. Executive Summary of the Project Work with its Soft Copy.
6. Accession Certificate.
7. Assets Certificate.

Copy to :

1. The Joint Secretary, UGC-WRO, Pune.
2. The Director, INFLIBNET, Gujrat University Campus, Ahmadabad.

Manjara Charitable Trust's
**SMT. SUSHILADEVI DESHMUKH SENIOR
COLLEGE, LATUR**

Khadgaon Road, Latur (Maharashtra State) 413531

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(Affiliated to : Swami Ramanand Teerth Marathwada University, Nanded)

Hon. Dillipraoji Deshmukh(MLC)
President

Dr.Ajay Patil(M.A.,Ph.D.)
Principal

SSDSCL/GC/2015-16/

Dt. 09/10/2017

CERTIFICATE

This is to certify that the Minor Research Project of Principal Investigator (PI) **Dr. Pradeep Nagnath Deshmukh** has uploaded the executive summary of the project on the college website, the URL link is

[http://www.sushiladevicollegelatur.com/wp-content/uploads/2017/12/Dr.](http://www.sushiladevicollegelatur.com/wp-content/uploads/2017/12/Dr.Pradeep N. Deshmukh pdf)

[Pradeep N. Deshmukh pdf](#)

This certificate is as per the requirement under Minor Research Project guidelines.

Principal

UNIVERSITY GRANTS COMMISSION

Final Report of the work done on the Minor Research Project

1. Project Report No.1st/2nd/3rd Final : **Final**
2. UGC letter Reference No. : **__File No.23-760/09 WRO**
3. Period of Report from : **September 2009 to August 2017**
4. Title of Research Project : **A Comparative Study of Effect of Pranayama Exercises & Endurance Exercises on Heart & Lungs Capacity**
5. a) Name of the Principal Investigator : **Dr. Deshmukh P. N.**
b) Department and College where work has progress : **Smt. Sushiladebvi Deshmukh Senior College, Khadgaon Road, Latur**
6. Effective date of starting of the Project : **1st September 2009**
7. Grant approved and expenditure incurred during the period of the report.
 - a) Total amount approved : **1,00,000/- (One Lakh Rupees only.)**
 - b) Total expenditure : - **1,01,945/- (One Lakh One Thousand Nine Hundred Fifty Five Only)**
 - c) Report of the work done : **(Separate sheet attached)**
 - i) Brief objective of the project : **(Sheet attached)**
 - ii) Work done so far and result achieved and publications, if any resulting from the work (Give details of the papers and name of the journal in which it has been published in : **Yes Attached**

- iii) Has the progress been according to original plan of work and towards achieving the objective : **Yes**
- iv) Please indicate the difficulties, if any experienced in implementing the project : **No**
- v) If project has not been completed, please indicate the approximate time by which it is likely to be completed. A summary of the work done for the period (annual basis) may submit to the commission on the separate sheet : **(Sheet attached)**
- vi) If the project has been completed, please enclose a summary of the finding of the study : **Sheet attached**
- vii) Any other information which would help in evaluation of work done ne the project. At the completion of the project. The first report should indicate the output, such as (a) man power trained (b) Ph.D. awarded (c) Publication of results (d) Other impact, if any not applicable.

Signature of the
Principal Investigator

Principal
Smt.Sushiladevideshmukh College, Latur

Sheet for Annexure-III , Point No-7

C- i) Brief objectives of the project.

- i) To understand the concept of the 'Pranayama & Endurance Exercises
- ii) To study the effect of Pranayama Exercises on Heart & Lungs Capacity
- iii) To study the Impact of Endurance Exercises on Heart & Lungs Capacity.
- iv) To study the Heart & Lungs Capacity.
- v) To Compare Effect of Pranayama & Endurance Exercises on Lungs Capacity.

Principal Investigator

Dr. Deshmukh P. N.

Annexure- III,

Pertaining Point No. 7-VI

Summary of Work completed

Final Report of Minor Research Project

**'A Comparative Study of Effect of Pranayama Exercises
& Endurance Exercises on Heart & Lungs Capacity'**

**A summary of work done for the period
from August 2009 to July 2017**

This Project divided into five chapters

Chapter- I

Introduction

Pranayama is a Sanskrit word which consists of prana and ayama. Prana means self-energizing life forces and ayama means extension. Pranayama may be defined as expansion and control of prana through various yogic techniques. In a simple way, we can say that pranayama is a combination of systematic exhalation and inhalation.

SIGNIFICANCE & IMPORTANCE OF PRANAYAMA

Pranayama is one of the important vital components of Yoga that directly or indirectly affects the proper functioning of different systems of the body. If you practice pranayama regularly, it shows beneficial impacts upon respiratory system, circulatory system, digestive system and endocrine system. Pranayama ensures more oxygen to lungs and good for hearts too. Pranayama tones up kidney and control the functions of nervous system. Kumbhaka or retention of breath helps supply of oxygen or exchange of oxygen and carbon dioxide thus facilitates better work of lungs and helps brain to work more efficiently. Pranayama affects autonomic nervous system which controls heart rate, glandular secretions, respiration, digestion and blood pressure.

HOW TO DO PRANAYAMA?

Before practising pranayama, certain precautions and essentials are to be taken. For pranayama practices, one has to ensure proper place, suitable time, mitahara diet and proper light. Pranayama can be practiced to any place that is well-ventilated from external disturbances. Spring and autumn seasons are the best periods for practicing pranayama as these seasons are favourable to the body and mind to keep them synergizes with the outside environment. To be fit

and healthy, 15 minutes of pranayama is good. It is also suggested that pranayama should be performed under the guidance of a yoga instructor.

Top benefits Pranayama Exercise

1. Pranayama control ageing.
2. Pranayama makes oxygen circulation smooth, helps in weight regulation by melting fat as more oxygen burns more fat.
3. Pranayama is the key of Intelligence.
4. It provides lightness to the body; acts as diseases destructor, brings vigour and power.
5. Pranayama helps in lungs expansion thereby improves its efficiency and makes it healthy.
6. It also helps in contending blood pressure and heart diseases; makes digestion smooth.
7. It cures the phlegm, mucus and tonsillitis problems. Makes your gums and teeth healthy.
8. Pranayama brings stillness and calmness to the mind, increased concentration and stability of mind. Pranayama is good for physical, mental and spiritual happiness.
9. It makes you free from constipation and indigestion problems.
10. Pranayama stimulates autonomic nervous system, sympathetic nervous system and parasympathetic nervous systems. It helps to ease stress, anxiety and tension. It also eases depression, dullness and lethargy.

ENDURANCE

Endurance means the ability or strength to continue or last, especially despite fatigue, stress, or other adverse conditions; stamina:

Endurance Exercises

Endurance exercise is one of the four types of exercise along with strength, balance and flexibility. Ideally, all four types of exercise would be included in a healthy workout routine and AHA (American Heart Association) provides easy-to-follow guidelines for endurance and strength-training in its Recommendations for Physical Activity in Adults.

They don't all need to be done every day, but variety helps keep the body fit and healthy, and makes exercise interesting. You can do a variety of exercises to keep the body fit and healthy and to keep your physical activity routine exciting. Many different types of exercises can improve strength, endurance, flexibility, and balance. For example, practicing yoga can improve your balance, strength, and flexibility. A lot of lower-body strength-training exercises also will improve your balance.

Also called aerobic exercise, endurance exercise includes activities that increase your breathing and heart rate such as walking, jogging, swimming, and biking.

Endurance activity keeps your heart, lungs and circulatory system healthy and improves your overall fitness. As a result, people who get the recommended regular physical activity can reduce the risk of many diseases such as diabetes, heart disease and stroke.

Building your endurance makes it easier to carry out many of your everyday activities. If you're just starting out on an exercise routine after being

sedentary, don't rush it. If you haven't been active for a long time, it's important to work your way up over time.

Start out with 10-15 minutes at a time and then gradually build up. The AHA recommends that adults get at least 150 minutes (2 1/2 hours) of moderate to vigorous activity per week. Thirty minutes a day five days a week is an easy goal to remember. Some people will be able to do more. It's important to set realistic goals based on your own health and abilities.

Examples of endurance exercise:

- Walking briskly
- Running / jogging
- Dancing
- Swimming
- Biking
- Climbing stairs at work
- Playing sports

Interdisciplinary Relevance:

As the physical activity improve health of human being Yogic science, fitness science & medical science recommend some yogic exercises & endurance exercises. The exercises may be have therapeutic value hence it may be treated as preventive & remedial treatment. Hence it is having scope within medical science as well physical education sciences.

Objectives:

The main objective is to compare effect of Pranayama exercises & endurance exercises on heart & lungs capacity of men.

- To understand the capacity of heart & lungs.

- To study the effect of Pranayama exercises on heart capacity.
- To study the effect of Pranayama exercises on lungs capacity.
- To study the effect of endurance exercises on heart capacity.
- To study the effect of endurance exercises on lungs capacity

Hypothesis:

- The participant will participate regularly in Pranayama & Endurance exercises training
- The Pranayama exercises have more benefit on lungs capacity than endurance exercises.
- The Pranayama exercises have less benefit on heart capacity than endurance exercises.

Limitation & Delimitation of study:

- The study deals with 30 to 45 age group men only.
- Geographical limitation of this study is Nanded, Hingoli, Latur & Parbhani district only.
- Study is limited to Pranayama exercises namely Bhastrika, kapalbhati, anulom-vilom, Bhramari & Ujjayi Pranayama.
- Study is limited to endurance exercises as Walking briskly Running / jogging.
- The study deals with heart rate for heart capacity.
- The study deals with vital capacity for lungs capacity.
- Day today working & lifestyle of participant is beyond the capacity of the researcher hence it is delimitation of the study.
- Day today changing environment, economical status, dietary habits is not controlled by researcher hence these are delimitation of the study.

Chapter – II

Review of Related Literature

Researcher reviewed previous research related to this study & framed the research procedure. Following three previous study summarised as follow

1) Yog Mimansa (2003)

Studied effect of yoga and Aerobics training on cardiorespiratory functions in obese people. As an outcome of one month programmes of weight have got beneficial effect on blood pressure and peak expiratory flow rate (PEER). Reducing BP and PEER yoga seems to be more effective in improving the respiratory efficiency in improving the respiratory efficiency as judged by PEER than the aerobics. The follow up study reveals that the cardiorespiratory effect of yoga is long lasting and deeper as compared to the aerobics. We seen obesity generally in the age group of 35 to 60 years people suffer hypertension and diabetes yoga is beneficial and recorded.

2) Berd, T.K., Gore, M.M., Kulkarni, D.D., & Bhoal, R.S. (2001)

Residential and non residential yoga training on Health related physical fitness of obese patients. In This research they study obesity yoga Health related physical fitness morphological constituents. The overall result support the residential yoga programme is more useful as a significant system of alternative medicine in treating obesity more over this study suggest yoga is associated with human culture and easily accessible to common mass yoga is not only for the treatment of obesity this is widely accepted by common people but so for preventing as well as controlling the associated disorders.

3) Venkatareddy, M.M., Sunita Raje, P.S., Prasad, K.V. (2003)

Effect of yoga on weight and fat fold thickness in obese women. They are studied this go days. They are included bodymass index, fat fold thickness, lean body mass.

- In this research two groups who are obese from childhood who are obese in betar life.
- The overall result is reduction in body weight and fat mass was significantly better in group II as compared to group.
- The practice of yoga mass and pranayamass for 3 months is justified in obesity. Although diet restriction is necessary with yoga for controlling obesity however this study indicates reduction in obesity without diet restriction.

No previous study deals with comparison of effect of Pranayama & Endurance exercises on heart rate & vital capacity. So researcher decided to fill up the cap & taken the research project.

Chapter III

Research Design and Procedure of Research

This chapter is deals with research design & research procedure.

Selection of Sample:

Researcher Randomly selected men having age group 30 to 45 years having no previous history of Pranayama & endurance exercises, from Nanded, Parbhani, Hingoli & Latur. $N = 300$. ($Nanded-75+Parbhani-75+Hingoli-75+Latur-75=300$). These sample are Randomly distributed in to 3 groups, each group of 100. $Group-A = 100+Group-B = 100+Group-C = 100$. Its is follow as Nanded-Group-A 25+ Group-B 25+Group-C 25= 75. Parbhani-Group-A 25+ Group-B 25+Group-C 25= 75. Hingoli-Group-A 25+ Group-B 25+Group-C 25= 75. Latur-Group-A 25+ Group-B 25+Group-C 25= 75.

Procedure:

Pranayama exercises are applied on Group-A for 30 minute per day, Endurance exercises are applied on Group-B for 30 minute per day & Group-C is control group, no Paranayama or endurance exercises are applied on Group-C.

Weekly, Sunday was the holiday, everyday in morning session group-A & group-B called for experiment. Pranayama exerices for group-A applied 6.15 to 6.45 Am & endurance exercises for group-B applied 7.00 to 7.30 Am.

Data Collection:

- The study is depending on primary data.
- All the data is collected by principle investigator in two phase as pre-test & post test.
- Researcher has collected data for heart capacity as heart rate & for lung capacity as vital capacity.

- Researcher administered Pranayama exercises as Bhastrika, kapalbhati, anulom-vilom, Bhramari & Ujjayi Pranayama 30 minute per day on group-A.
- Researcher administered endurance exercises as Walking briskly Running / jogging for 30 minute per day on group-B

Chapter – IV

Analysis & Interpretation of Data & Results

Collected Data was analysed with SPSS version three. The significant value-t > 0.05 fixed. The results are tabulated for details understanding.

Table no. 1

Table showing the comparative results of Pranayama exercises on heart capacity of pre-test & post test

Group	Mean	Standard Deviation	t-value	Significance t(2-taild)	Standard Error difference
Group-A	61.25	3.81	1.457	0.153	1.235
Group-C	79.25	4.10			

Table no. 1 showing the results of pre & post test of effect of Pranayama exercises on heart capacity i.e. heart rate. Group-A shows mean heart rate 61.25 per minute. Group-C shows mean heart rate 79.25 per minute. The standard deviation of heart rate for Group-A 3.81 & for Group-C 4.10. The t-value is 1.457. The standard error difference is 1.235. The significance t (2-taild) is 0.153.

Table no. 2

Table showing the comparative results of Endurance exercises on heart capacity of pre-test & post test

Group	Mean	Standard Deviation	t-value	Significance t(2-taild)	Standard Error difference
Group-B	62.25	3.89	1.468	0.161	1.235
Group-C	79.25	4.10			

Table no. 2 showing the results of pre & post test of effect of Endurance exercises on heart capacity i.e. heart rate. Group-B shows mean heart rate 62.25 per minute. Group-C shows mean heart rate 79.25 per minute. The standard deviation of heart rate for Group-B 3.89 & for Group-C 4.10. The t-value is 1.468. The standard error difference is 1.235. the significance t (2-taild) is 0.161.

Table no. 3

Table showing the comparative results of Pranayama exercises on lungs capacity of pre-test & post test

Group	Mean	Standard Deviation	t-value	Significance t(2-taild)	Standard Error difference
Group-A	31.25	2.81	1.331	0.453	1.21
Group-C	29.25	2.10			

Table no. 3 showing the results of pre & post test of effect of Pranayama exercises on lungs capacity i.e. vital capacity. Group-A shows mean vital capacity 31.25. Group-C shows mean vital capacity 29.25. The standard deviation of vital capacity for Group-A 2.81 & for Group-C 2.10. The t-value is 1.331. The standard error difference is 1.21. The significance t (2-taild) is 0.453.

Table no. 4

Table showing the comparative results of Endurance exercises on lungs capacity of pre-test & post test

Group	Mean	Standard Deviation	t-value	Significance t(2-tailed)	Standard Error difference
Group-B	32.25	3.66	1.755	0.561	1.21
Group-C	29.25	2.10			

Table no. 4 showing the results of pre & post test of effect of Endurance exercises on lungs capacity i.e. vital capacity. Group-B shows mean vital capacity 32.25. Group-C shows mean vital capacity 29.25. The standard deviation of vital capacity for Group-B 3.66 & for Group-C 2.10. The t-value is 1.755. The standard error difference is 1.21. The significance t (2-tailed) is 0.561.

Results:

The significance t (2-tailed) is $0.153 > 0.05$ hence Pranayama exercises is significantly important on heart rate.

The significance t (2-tailed) is $0.161 > 0.05$ hence Endurance exercises is significantly important on heart rate.

The significance t (2-tailed) is $0.453 > 0.05$ hence Pranayama exercises is significantly important on vital capacity.

The significance t (2-tailed) is $0.561 > 0.05$ hence Endurance exercises is significantly important on vital capacity.

Chapter V

Conclusion and Recommendation

With the statistical analysis & interpretation of results researcher made following conclusions.

The significance t (2-tailed) pre & post test of effect of Pranayama on heart rate is $0.153 > 0.05$ hence Pranayama exercises is significantly important on heart capacity.

The significance t (2-tailed) pre & post test of effect of endurance exercises on heart rate is $0.161 > 0.05$ hence Endurance exercises is significantly important on heart capacity.

The significance t (2-tailed) pre & post test of effect of Pranayama exercises on vital capacity is $0.453 > 0.05$ hence Pranayama exercises is significantly important on lungs capacity.

The significance t (2-tailed) pre & post test of effect of endurance exercises is $0.561 > 0.05$ hence Endurance exercises is significantly important on lungs capacity.

The Pranayama exercises have less benefit on lungs capacity than endurance exercises.

The Pranayama exercises have less benefit on heart capacity than endurance exercises.

Recommendations :

- Endurance exercises improves heart & lungs capacity little but more than Pranayama exercises hence to increase heart & lungs capacity preference should be given to Endurance exercises.
- In endurance exercises there is possibility of injuries hence for less injuries preference should be given to Pranayama exercises.
- In the teen age preference may be give to endurance exercises for better heart & lungs capacity.
- Above 35 age group persons on the basis of fear & tear should give preference to Pranayama exercises.

Principal investigator

Dr. Deshmukh P. N.

UNIVERSITY GRANTS COMMISSION

UTILIZATION CERTIFICATE

Certified that the grant of Rs.75,000/- (**Rs. Seventy Five thousand only**) received from University Grants Commission, under the scheme of support for Minor Research Project entitled "**A Comparative Study of Effect of Pranayama Exercises & Endurance Exercises on Heart & Lungs Capacity**" in the subject Physical Education vide letter No. file No. 23-760/09(WRO) dated 20 August 2009 has been fully utilized for the purpose for which it was sanctioned and in accordance with the term and conditions laid down by the University Grants Commission.

SIGNATURE OF THE
PRINCIPAL INVESTIGATOR

PRINCIPAL

SEAL AND SIGNATURE OF AUDITOR

UNIVERSITY GRANTS COMMISSION

STATEMENT OF EXPENDITURE IN RESPECT OF MINOR RESEARCH PROJECT

1. Name of Principal Investigator : **Dr. Deshmukh P.N.**
2. College : Smt. Sushiladevi Deshmukh Senior
College, Latur
3. UGC Approval No. : File No.23-760/09 (WRO) dated
20 August 2009.
4. Title of the Research Project : A Comparative Study of Effect of
Pranayama Exercises & Endurance
Exercises on Heart & Lungs Capacity
5. Effective date of starting the project : 1st September 2009
6. (a) Period of Expenditure : From 1st September 2009 to 30 August
2017.

(b) Details of Expenditure :

Sr.No.	Item	Expenditure	
		Amount Approved Rs	Incurred Rs.
i)	Books & Journals	30,000/-	31,005
ii)	Equipment	20,000/-	21,030
iii)	Contingency	10,000/-	9,910
iv)	Special needs	20,000/-	20,000
v)	Field work/Travel	20,000/-	20,000
vi)	Chemicals	-	-
vii)	Others	-	-
	Total	1,00,000/-	1,01,945.00

(c) Staff : Not Applicable.

1. It as a result of check or audit objective, some irregularly is noticed, later date, action will be taken to refund, adjust or regularize the objected amounts.
2. Payment @ revised rates shall be made with arrears on the availability of additional funds.
3. It is certified that the grant of Rs.1,00,000/- (Rupees One lakh only) received from the University Grants Commission under the scheme of support for Minor Research Project entitled “**A Comparative Study of Effect of Pranayama Exercises & Endurance Exercises on Heart & Lungs Capacity**” vide UGC letter No. File No.23-760/09 (WRO) dated 20 August 2009 has been fully utilized for the purpose for which it was sanctioned and in accordance with the terms and conditions laid down by the University Grants Commission.

SIGNATURE OF THE
PRINCIPAL INVESTIGATOR

PRINCIPAL
Smt. Sushiladevi Deshmukh
Senior College, Latur

SEAL AND SIGNATURE OF AUDITOR

ANNEXURE – VI

UNIVERSITY GRANTS COMMISSION

STATEMENT OF EXPENDITURE INCURRED ON FIELD WORK

Name of the Principal Investigator : Dr. Deshmukh P. N.

Name of the School/College : Smt. Sushiladevi Deshmukh Senior
College, Latur

Name of the place visited	Date of the visit	Mode of Journey	Expenditure incurred (Rs.)
Latur to Nanded	Aug. 16,2009	By Car	1800/-
Latur to Parbhani	Oct.14,2009	By Car	1800/
Latur to Hingoli	Dec.22,2009	By Car	2300/
Latur Nanded	Feb.16,2010	By Car	1800/
Latur to Hingoli	Apr.13,2010	By Car	2300/
Latur to Parbhani	May 04,2010	By Car	1800/
Latur to Nanded	June 13,2011	By Car	1800/
Latur to Hingoli	Aug.17,2012	By Car	2300/
Latur to Parbhani	Oct.12,2013	By Car	1800/
Latur to Hingoli	Dec.22,2014	By Car	2300/
		Total	20,000/-

Certified that the above expenditure is in accordance with UGC norms for Minor Research Project

SIGNATURE OF PRINCIPAL
INVESTIGATORPRINCIPAL
Smt. Sushiladevi Deshmukh
Senior College, Latur

UNIVERSITY GRANTS COMMISSION

PROFORMA FOR SUBMISSION OF INFORMATION AT THE TIME OF SENDING THE FINAL REPORT OF THE WORK DONE ON THE PROJECT

1. NAME AND ADDRESS OF THE PRINCIPAL INVESTIGATOR: Dr. Deshmukh P.N.
2. NAME AND ADDRESS OF THE INSTITUTION : S.S.D. Senior college, Latur.
3. UGC APPROVAL NO. AND DATE : File No.23-760/09 (WRO)
dated 20 August 2009.
4. DATE OF IMPLEMENTATION : 1ST September 2009.
5. TENURE OF PROJECT : 24 Months.
6. TOTAL GRANT ALLOCATED : 1,00,000/-
7. TOTAL GRANT RECEIVED : 75,000/-
8. FINAL EXPENDITURE : 1,01,945/-
9. TITLE OF THE PROJECT : “A Comparative Study of
Effect of Pranayama
Exercises & Endurance
Exercises on Heart &
Lungs Capacity”
10. OBJECTIVE OF THE PROJECT : Sheet Attached.
11. WHETHER OBJECTIVE ARE ACHIEVED : Sheet Attached.
12. ACHIVEMENTS FROM THE PROJECT : Sheet Attached.
13. SUMMARY OF THE FINDING : Sheet attached.
(In 500 words)
14. CONTRIBUTION TO THE SOCIETY : Sheet Attached.
(Give Details)
15. WHETHER ANY Ph.D. ENROLLED / PRODUCED : No
(Out of the Project)
16. NO. OF PUBLICATION OUT OF THE PROJECT No (Please attach Re-prints)

SIGNATURE OF PRINCIPAL
INVESTIGATOR

PRINCIPAL
Smt. Sushiladevi Deshmukh Senior
College, Latur

SEAL AND SIGNATURE OF AUDITOR

**Sheet for annexure -VIII ,
Pertaining point No. 10**

OBJECTIVES OF THE PROJECT

The main objective is to compare effect of Pranayama exercises & endurance exercises on heart & lungs capacity of men.

- To understand the capacity of heart & lungs.
- To study the effect of Pranayama exercises on heart capacity.
- To study the effect of Pranayama exercises on lungs capacity.
- To study the effect of endurance exercises on heart capacity.
- To study the effect of endurance exercises on lungs capacity

Annexure- VIII Pertaining Point No. 11

DETAILS OF ACHIEVED OBJECTIVES

I have achieved following objectives.

- 1) I have studied the status of heart & lungs capacity of men from Latur, Hingoli, Nanded, Parbhani district.
- 2) I have studied impact of Pranayama exercises on heart rate of men.
- 3) I have studied effect of endurance exercises on vital capacity of lungs amongst 30 to 45 age group men.
- 4) I have studied effect of endurance exercises on vital capacity of lungs amongst 30 to 45 age group men.
- 5) I have studied the therapeutic value of Pranayama & endurance exercises to improve heart & lungs capacity.

**SIGNATURE OF PRINCIPAL
INVESTIGATOR**

Dr. Deshmukh P.N.

Sheet for annexure - VIII, Pertaining point No.13

EXECUTIVE SUMMARY OF THE FINDINGS

“A Comparative Study of Effect of Pranayama Exercises & Endurance Exercises on Heart & Lungs Capacity”

Researcher Randomly selected men having age group 30 to 45 years having no previous history of Pranayama & endurance exercises, from Nanded, Parbhani, Hingoli & Latur. N= 300. (Nanded-75+Parbhani-75+Hingoli-75+Latur-75=300). These sample are Randomly distributed in to 3 groups, each group of 100. Group-A= 100+Group-B= 100+Group-C= 100. Its is follow as Nanded-Group-A 25+ Group-B 25+Group-C 25= 75. Parbhani-Group-A 25+ Group-B 25+Group-C 25= 75. Hingoli-Group-A 25+ Group-B 25+Group-C 25= 75. Latur-Group-A 25+ Group-B 25+Group-C 25= 75. Pranayama exercises are applied on Group-A for 30 minute per day, Endurance exercises are applied on Group-B for 30 minute per day & Group-C is control group, no Paranayama or endurance exercises are applied on Group-C. Weekly, Sunday was the holiday, everyday in morning session group-A & group-B called for experiment. Pranayama exerices for group-A applied 6.15 to 6.45 Am & endurance exercises for group-B applied 7.00 to 7.30 Am.

Data Collection: The study is depending on primary data. All the data is collected by principle investigator in two phase as pre-test & post test. Researcher has collected data for heart capacity as heart rate & for lung capacity as vital capacity. Researcher administered Pranayama exercises as Bhastrika, kapalbhati, anulom-vilom, Bhramari & Ujjayi Pranayama 30 minute per day on

group-A. Researcher administered endurance exercises as Walking briskly Running / jogging for 30 minute per day on group-B

Results & Conclusions:

With the statistical analysis & interpretation of results researcher made following conclusions. The significance t (2-tailed) pre & post test of effect of Pranayama on heart rate is $0.153 > 0.05$ hence Pranayama exercises is significantly important on heart capacity. The significance t (2-tailed) pre & post test of effect of endurance exercises on heart rate is $0.161 > 0.05$ hence Endurance exercises is significantly important on heart capacity. The significance t (2-tailed) pre & post test of effect of Pranayama exercises on vital capacity is $0.453 > 0.05$ hence Pranayama exercises is significantly important on lungs capacity. The significance t (2-tailed) pre & post test of effect of endurance exercises is $0.561 > 0.05$ hence Endurance exercises is significantly important on lungs capacity. The Pranayama exercises have less benefit on lungs capacity than endurance exercises. The Pranayama exercises have less benefit on heart capacity than endurance exercises.

Recommendations :

- Endurance exercises improves heart & lungs capacity little but more than Pranayama exercises hence to increase heart & lungs capacity preference should be given to Endurance exercises.
- In endurance exercises there is possibility of injuries hence for less injuries preference should be given to Pranayama exercises.
- In the teen age preference may be give to endurance exercises for better heart & lungs capacity.
- Above 35 age group persons on the basis of fear & tear should give preference to Pranayama exercises.

Sheet for Annexure- VIII , Pertaining Point No.14

CONTRIBUTION TO THE SOCIETY

The various contributions made to society by Minor Research

Project are as follows:

- 1) More than 60% Indians are suffering from heart & lungs dices & this study may be useful for healthy India.
- 2) I have found that effect of Pranayama & endurance exercises is significance for healthy heart & lungs.
- 3) If all Indians regularly do Pranayama & endurance exercises less Indian populations will be face heart & lungs dices.
- 4) For less fear & tear during exercises Pranayama exercises is the best option.

Principal Investigator

Dr. Deshmukh P. N.

U.G.C. - WRO, Pune
Minor Research Project

Accession Certificate

Name of Investigator : Dr. Deshmukh P. N.
College Name : Smt. Sushiladevi Deshmukh Senior College,
Latur
Date of starting of project : 1st September 2009

It is certified that book and subscribed issues of the journal purchased from the Minor Research Projects Grant have been handled over to the college central library. The accession numbers are from **369** to **449**

Date : 07/10/2017

Investigator
Principal

Librarian

U.G.C. - WRO, Pune

Minor Research Project

Assets Certificate

Name of Investigator : Dr. Deshmukh P. N.
College Name : Smt. Sushiladevi Deshmukh Senior College,
Latur
Date of starting of project : 1st September 2009

It is certified that the equipment have been handed over to the college.

- | | |
|-------------------------|-----|
| 1) Scanner & Printer | -01 |
| 2) Keyboard mouse combo | -01 |
| 3) Net setter | -01 |
| 4) Audio Recorder | -01 |

Date: 07/10/2017

Principal
Investigator

Principal

Dr. Ajay Patil

**UNIVERSITY GRANTS COMMISSION
BAHADUR SHAH ZAFAR MARG
NEW DELHI – 110 002.**

Annual/Final Report of the work done on the Minor Research Project.

(Report to be submitted within 6 weeks after completion of each year)

- 1. Project report No. 1st** : 1st
- 2. UGC Reference No.F** : 23-760/09 WRO
- 3. Period of report: from** : August 2009 to July 2010
- 4. Title of research project :** : **“A Comparative Study of Effect of Pranayama Exercises & Endurance Exercises on Heart & Lungs Capacity”**
- 5. (a) Name of the Principal Investigator** : Dr. Deshmukh P.N.
(b) Deptt. : Physical Education
(c) College where work has progressed : Smt.Sushiladevi Deshmukh Senior College, Latur
- 6. Effective date of starting of the project** : 01/09/2009
- 7. Grant approved and expenditure incurred during the period of the report:**
- a. Total amount approved Rs.** : 75,000/-
- b. Total expenditure Rs.** : 67,250/-
- c. Report of the work done** : conceptual framework Data collection & analysis
- i. Brief objective of the project** : (separate sheet attached)
- ii. Work done so far and results achieved and publications, if any, resulting from the work** : NO
- iii. Has the progress been according to original plan of work and towards achieving the objective. if not, state reasons** : Work Is ongoing
- iv. Please enclose a summary of the findings of the study. One bound copy of the final report of work done may also be sent to the concerned Regional Office of the UG** : Yes
- v. Any other information** : No

SIGNATURE OF THE PRINCIPAL INVESTIGATOR

PRINCIPAL

(Seal)

I st Progress report point no 7 (I)

Brief objectives of the project.

The main objective is to compare effect of Pranayama exercises & endurance exercises on heart & lungs capacity of men.

- To understand the capacity of heart & lungs.
- To study the effect of Pranayama exercises on heart capacity.
- To study the effect of Pranayama exercises on lungs capacity.
- To study the effect of endurance exercises on heart capacity.
- To study the effect of endurance exercises on lungs capacity

Principal Investigator

Dr. Deshmukh P. N.

UNIVERSITY GRANTS COMMISSION
BAHADUR SHAH ZAFAR MARG
NEW DELHI – 110 002.

Annual/Final Report of the work done on the Minor Research Project.
(Report to be submitted within 6 weeks after completion of each year)

1. Project report No. : 2nd
2. UGC Reference No.F : 23-760/09 WRO
3. Period of report: from : August 2009 to July 2010
4. Title of research project : **“A Comparative Study of Effect of Pranayama Exercises & Endurance Exercises on Heart & Lungs Capacity”**
5. (a) Name of the Principal Investigator : Dr. Deshmukh P.N.
(c) Deptt. : Physical Education
(d) College where work has progressed : Smt.Sushiladevi Deshmukh Senior College, Latur
6. Effective date of starting of the project : 01/09/2009
7. Grant approved and expenditure incurred during the period of the report:
- a. Total amount approved Rs. : 25,000/-
- b. Total expenditure Rs. : 31,846/-
- c. Report of the work done : (separate sheet attached)
- i. Brief objective of the project : (separate sheet attached)
- ii. Work done so far and results achieved and publications, if any, resulting from the work : No
- iii. Has the progress been according to original plan of work and towards achieving the objective. if not, state reasons : Work Is ongoing
- iv. Please enclose a summary of the findings of the study. One bound copy of the final report of work done may also be sent to the concerned Regional Office of the UG : Yes
- v. Any other information : No

SIGNATURE OF THE PRINCIPAL INVESTIGATOR

PRINCIPAL

(Seal)

II Progress report point no 7 (I)

Brief objectives of the project.

The main objective is to compare effect of Pranayama exercises & endurance exercises on heart & lungs capacity of men.

- To understand the capacity of heart & lungs.
- To study the effect of Pranayama exercises on heart capacity.
- To study the effect of Pranayama exercises on lungs capacity.
- To study the effect of endurance exercises on heart capacity.
- To study the effect of endurance exercises on lungs capacity

Principal Investigator

Dr. Deshmukh P. N.

UNIVERSITY GRANTS COMMISSION
BAHADUR SHAH ZAFAR MARG
NEW DELHI – 110 002.

Annual/Final Report of the work done on the Minor Research Project.
(Report to be submitted within 6 weeks after completion of each year)

1. Project report No. : 3rd
2. UGC Reference No.F : 23-760/09 WRO
3. Period of report: from : August 2009 to July 2010
4. Title of research project : **“A Comparative Study of Effect of Pranayama Exercises & Endurance Exercises on Heart & Lungs Capacity”**
5. (a) Name of the Principal Investigator : Dr. Deshmukh P.N.
(e) Deptt. : Physical Education
(f) College where work has progressed : Smt.Sushiladevi Deshmukh Senior College, Latur
6. Effective date of starting of the project : 01/09/2009
7. Grant approved and expenditure incurred during the period of the report:
a. Total amount approved Rs. : 25,000/-
b. Total expenditure Rs. : 31,846/-
c. Report of the work done : (separate sheet attached)
i. Brief objective of the project : (separate sheet attached)
ii. Work done so far and results achieved and publications, if any, resulting from the work : No
iii. Has the progress been according to original plan of work and towards achieving the objective. if not, state reasons : Work Is ongoing
iv. Please enclose a summary of the findings of the study. One bound copy of the final report of work done may also be sent to the concerned Regional Office of the UG : Yes
v. Any other information : No

SIGNATURE OF THE PRINCIPAL INVESTIGATOR

PRINCIPAL

(Seal)

III Progress report point no 7 (I)

Brief objectives of the project.

The main objective is to compare effect of Pranayama exercises & endurance exercises on heart & lungs capacity of men.

- To understand the capacity of heart & lungs.
- To study the effect of Pranayama exercises on heart capacity.
- To study the effect of Pranayama exercises on lungs capacity.
- To study the effect of endurance exercises on heart capacity.
- To study the effect of endurance exercises on lungs capacity

Principal Investigator

Dr. Deshmukh P. N.

UNIVERSITY GRANTS COMMISSION
BAHADUR SHAH ZAFAR MARG
NEW DELHI – 110 002.

Annual/Final Report of the work done on the Minor Research Project.
(Report to be submitted within 6 weeks after completion of each year)

1. Project report No. : 4th
2. UGC Reference No.F : 23-760/09 WRO
3. Period of report: from : August 2009 to July 2010
4. Title of research project : **“A Comparative Study of Effect of Pranayama Exercises & Endurance Exercises on Heart & Lungs Capacity”**
5. (a) Name of the Principal Investigator : Dr. Deshmukh P.N.
(g) Deptt. : Physical Education
(h) College where work has progressed : Smt.Sushiladevi Deshmukh Senior College, Latur
6. Effective date of starting of the project : 01/09/2009
7. Grant approved and expenditure incurred during the period of the report:
a. Total amount approved Rs. : 25,000/-
b. Total expenditure Rs. : 31,846/-
c. Report of the work done : (separate sheet attached)
i. Brief objective of the project : (separate sheet attached)
ii. Work done so far and results achieved and publications, if any, resulting from the work : No
iii. Has the progress been according to original plan of work and towards achieving the objective. if not, state reasons : Work Is ongoing
iv. Please enclose a summary of the findings of the study. One bound copy of the final report of work done may also be sent to the concerned Regional Office of the UG : Yes
v. Any other information : No

SIGNATURE OF THE PRINCIPAL INVESTIGATOR

PRINCIPAL

(Seal)

IV Progress report point no 7 (I)

Brief objectives of the project.

The main objective is to compare effect of Pranayama exercises & endurance exercises on heart & lungs capacity of men.

- To understand the capacity of heart & lungs.
- To study the effect of Pranayama exercises on heart capacity.
- To study the effect of Pranayama exercises on lungs capacity.
- To study the effect of endurance exercises on heart capacity.
- To study the effect of endurance exercises on lungs capacity

Principal Investigator

Dr. Deshmukh P. N.

UNIVERSITY GRANTS COMMISSION
BAHADUR SHAH ZAFAR MARG
NEW DELHI – 110 002.

Annual/Final Report of the work done on the Minor Research Project.
(Report to be submitted within 6 weeks after completion of each year)

1. Project report No. : 5th
2. UGC Reference No.F : 23-760/09 WRO
3. Period of report: from : August 2009 to July 2010
4. Title of research project : **“A Comparative Study of Effect of Pranayama Exercises & Endurance Exercises on Heart & Lungs Capacity”**
5. (a) Name of the Principal Investigator : Dr. Deshmukh P.N.
(i) Deptt. : Physical Education
(j) College where work has progressed : Smt.Sushiladevi Deshmukh Senior College, Latur
6. Effective date of starting of the project : 01/09/2009
7. Grant approved and expenditure incurred during the period of the report:
a. Total amount approved Rs. : 25,000/-
b. Total expenditure Rs. : 31,846/-
c. Report of the work done : (separate sheet attached)
i. Brief objective of the project : (separate sheet attached)
ii. Work done so far and results achieved and publications, if any, resulting from the work : NO
iii. Has the progress been according to original plan of work and towards achieving the objective. if not, state reasons : Work Is ongoing
iv. Please enclose a summary of the findings of the study. One bound copy of the final report of work done may also be sent to the concerned Regional Office of the UG : Yes
v. Any other information : No

SIGNATURE OF THE PRINCIPAL INVESTIGATOR

PRINCIPAL

(Seal)

V Progress report point no 7 (I)

Brief objectives of the project.

The main objective is to compare effect of Pranayama exercises & endurance exercises on heart & lungs capacity of men.

- To understand the capacity of heart & lungs.
- To study the effect of Pranayama exercises on heart capacity.
- To study the effect of Pranayama exercises on lungs capacity.
- To study the effect of endurance exercises on heart capacity.
- To study the effect of endurance exercises on lungs capacity

Principal Investigator

Dr. Deshmukh P. N.

UNIVERSITY GRANTS COMMISSION
BAHADUR SHAH ZAFAR MARG
NEW DELHI – 110 002.

Annual/Final Report of the work done on the Minor Research Project.
(Report to be submitted within 6 weeks after completion of each year)

1. Project report No. : 6th
2. UGC Reference No.F : 23-760/09 WRO
3. Period of report: from : August 2009 to July 2010
4. Title of research project : **“A Comparative Study of Effect of Pranayama Exercises & Endurance Exercises on Heart & Lungs Capacity”**
5. (a) Name of the Principal Investigator : Dr. Deshmukh P.N.
(k) Deptt. : Physical Education
(l) College where work has progressed : Smt.Sushiladevi Deshmukh Senior College, Latur
6. Effective date of starting of the project : 01/09/2009
7. Grant approved and expenditure incurred during the period of the report:
a. Total amount approved Rs. : 25,000/-
b. Total expenditure Rs. : 31,846/-
c. Report of the work done : (separate sheet attached)
i. Brief objective of the project : (separate sheet attached)
ii. Work done so far and results achieved and publications, if any, resulting from the work : No
iii. Has the progress been according to original plan of work and towards achieving the objective. if not, state reasons : Work Is ongoing
iv. Please enclose a summary of the findings of the study. One bound copy of the final report of work done may also be sent to the concerned Regional Office of the UG : Yes
v. Any other information : no

SIGNATURE OF THE PRINCIPAL INVESTIGATOR

PRINCIPAL

(Seal)

VI Progress report point no 7 (I)

Brief objectives of the project.

The main objective is to compare effect of Pranayama exercises & endurance exercises on heart & lungs capacity of men.

- To understand the capacity of heart & lungs.
- To study the effect of Pranayama exercises on heart capacity.
- To study the effect of Pranayama exercises on lungs capacity.
- To study the effect of endurance exercises on heart capacity.
- To study the effect of endurance exercises on lungs capacity

Principal Investigator

Dr. Deshmukh P. N.

UNIVERSITY GRANTS COMMISSION
BAHADUR SHAH ZAFAR MARG
NEW DELHI – 110 002.

Annual/Final Report of the work done on the Minor Research Project.
(Report to be submitted within 6 weeks after completion of each year)

1. Project report No. : 7th
2. UGC Reference No.F : 23-760/09 WRO
3. Period of report: from : August 2009 to July 2010
4. Title of research project : **“A Comparative Study of Effect of Pranayama Exercises & Endurance Exercises on Heart & Lungs Capacity”**
5. (a) Name of the Principal Investigator : Dr. Deshmukh P.N.
(m) Deptt. : Physical Education
(n) College where work has progressed : Smt.Sushiladevi Deshmukh Senior College, Latur
6. Effective date of starting of the project : 01/09/2009
7. Grant approved and expenditure incurred during the period of the report:
a. Total amount approved Rs. : 25,000/-
b. Total expenditure Rs. : 31,846/-
c. Report of the work done : (separate sheet attached)
i. Brief objective of the project : (separate sheet attached)
ii. Work done so far and results achieved and publications, if any, resulting from the work : NO
iii. Has the progress been according to original plan of work and towards achieving the objective. if not, state reasons : Work Is ongoing
iv. Please enclose a summary of the findings of the study. One bound copy of the final report of work done may also be sent to the concerned Regional Office of the UG : Yes
v. Any other information : No

SIGNATURE OF THE PRINCIPAL INVESTIGATOR

PRINCIPAL

(Seal)

VII Progress report point no 7 (I)

Brief objectives of the project.

The main objective is to compare effect of Pranayama exercises & endurance exercises on heart & lungs capacity of men.

- To understand the capacity of heart & lungs.
- To study the effect of Pranayama exercises on heart capacity.
- To study the effect of Pranayama exercises on lungs capacity.
- To study the effect of endurance exercises on heart capacity.
- To study the effect of endurance exercises on lungs capacity

Principal Investigator

Dr. Deshmukh P. N.

UNIVERSITY GRANTS COMMISSION
BAHADUR SHAH ZAFAR MARG
NEW DELHI – 110 002.

Annual/Final Report of the work done on the Minor Research Project.
(Report to be submitted within 6 weeks after completion of each year)

1. Project report No. : 8th / Final
2. UGC Reference No.F : 23-760/09 WRO
3. Period of report: from : August 2009 to July 2010
4. Title of research project : **“A Comparative Study of Effect of Pranayama Exercises & Endurance Exercises on Heart & Lungs Capacity”**
5. (a) Name of the Principal Investigator : Dr. Deshmukh P.N.
(o) Deptt. : Physical Education
(p) College where work has progressed : Smt.Sushiladevi Deshmukh Senior College, Latur
6. Effective date of starting of the project : 01/09/2009
7. Grant approved and expenditure incurred during the period of the report:
a. Total amount approved Rs. : 75,000/-
b. Total expenditure Rs. : 1,01,945/-
c. Report of the work done : (separate sheet attached)
i. Brief objective of the project : (separate sheet attached)
ii. Work done so far and results achieved and publications, if any, resulting from the work : No
iii. Has the progress been according to original plan of work and towards achieving the objective. if not, state reasons : Yes
iv. Please enclose a summary of the findings of the study. One bound copy of the final report of work done may also be sent to the concerned Regional Office of the UG : Yes
v. Any other information : No

SIGNATURE OF THE PRINCIPAL INVESTIGATOR

PRINCIPAL

(Seal)

VIII & Final Progress report point no 7 (I)

Brief objectives of the project.

The main objective is to compare effect of Pranayama exercises & endurance exercises on heart & lungs capacity of men.

- To understand the capacity of heart & lungs.
- To study the effect of Pranayama exercises on heart capacity.
- To study the effect of Pranayama exercises on lungs capacity.
- To study the effect of endurance exercises on heart capacity.
- To study the effect of endurance exercises on lungs capacity

Principal Investigator

Dr. Deshmukh P. N.

8th & Final Progress report point no 7 (IV)

SUMMARY OF THE FINDINGS

“A Comparative Study of Effect of Pranayama Exercises & Endurance Exercises on Heart & Lungs Capacity”

Researcher Randomly selected men having age group 30 to 45 years having no previous history of Pranayama & endurance exercises, from Nanded, Parbhani, Hingoli & Latur. N= 300. (Nanded-75+Parbhani-75+Hingoli-75+Latur-75=300). These sample are Randomly distributed in to 3 groups, each group of 100. Group-A= 100+Group-B= 100+Group-C= 100. Its is follow as Nanded-Group-A 25+ Group-B 25+Group-C 25= 75. Parbhani-Group-A 25+ Group-B 25+Group-C 25= 75. Hingoli-Group-A 25+ Group-B 25+Group-C 25= 75. Latur-Group-A 25+ Group-B 25+Group-C 25= 75. Pranayama exercises are applied on Group-A for 30 minute per day, Endurance exercises are applied on Group-B for 30 minute per day & Group-C is control group, no Paranayama or endurance exercises are applied on Group-C. Weekly, Sunday was the holiday, everyday in morning session group-A & group-B called for experiment. Pranayama exerices for group-A applied 6.15 to 6.45 Am & endurance exercises for group-B applied 7.00 to 7.30 Am.

Data Collection: The study is depending on primary data. All the data is collected by principle investigator in two phase as pre-test & post test. Researcher has collected data for heart capacity as heart rate & for lung capacity as vital capacity. Researcher administered Pranayama exercises as Bhastrika, kapalbhati, anulom-vilom, Bhramari & Ujjayi Pranayama 30 minute per day on group-A. Researcher administered endurance exercises as Walking briskly Running / jogging for 30 minute per day on group-B

Results & Conclusions:

With the statistical analysis & interpretation of results researcher made following conclusions. The significance t (2-tailed) pre & post test of effect of Pranayama on heart rate is $0.153 > 0.05$ hence Pranayama exercises is significantly important on heart capacity. The significance t (2-tailed) pre & post test of effect of endurance exercises on heart rate is $0.161 > 0.05$ hence Endurance exercises is significantly important on heart capacity. The significance t (2-tailed) pre & post test of effect of Pranayama exercises on vital capacity is $0.453 > 0.05$ hence Pranayama exercises is significantly important on lungs capacity. The significance t (2-tailed) pre & post test of effect of endurance exercises is $0.561 > 0.05$ hence Endurance exercises is significantly important on lungs capacity. The Pranayama exercises have less benefit on lungs capacity than endurance exercises. The Pranayama exercises have less benefit on heart capacity than endurance exercises.

Recommendations :

- Endurance exercises improves heart & lungs capacity little but more than Pranayama exercises hence to increase heart & lungs capacity preference should be given to Endurance exercises.
- In endurance exercises there is possibility of injuries hence for less injuries preference should be given to Pranayama exercises.
- In the teen age preference may be give to endurance exercises for better heart & lungs capacity.
- Above 35 age group persons on the basis of fear & tear should give preference to Pranayama exercises.

