iJRASET
International Journal For Research in Applied Science and Engineering Technology



INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 11 **Issue:** XII **Month of publication:** December 2023

DOI: https://doi.org/10.22214/ijraset.2023.57759

www.ijraset.com

Call: 08813907089 | E-mail ID: ijraset@gmail.com

International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 11 Issue XII Dec 2023- Available at www.ijraset.com

Effect of Ten Weeks of Yoga Intervention on Vital Capacity among Pondicherry University Community College Students

Dr. R. Murugesan
Assistant Professor Department of Physical Education and Yoga Pondicherry University Community College, Lawspet, Puducherry, India

Abstract: ***The present study was conducted on physically active men students to assess the relative effects of selected yogic practices on vital capacity. For the present study 10 men students from Pondicherry University Community College were selected. 10 weeks of yogic training was given to selected subjects. The treatment schedule was prepared for 10 weeks. The experimental treatment was given for 45 minutes a day in 5 days in a week.***
The vital capacity was measured both pre and post training situations of before and after 10 weeks of Pranayama training. After 10 weeks of Pranayama training Vital Capacity was significantly improved in the selected subjects. This is due to the yogic training given.
Keywords: Yoga, Pranayama, Vital capacity

I. INTRODUCTION

Many People are inappropriate breathing and they are unaware of this fact. Correct breathing profoundly improves the efficient functioning of our body and mind. The incorrect breathing results in various disturbances in body and mind functions. By practicing Pranayama one could regulate this breathing in proper way.
The daily session of Yoga-breathing increases vital capacity, energizes, exercises the lungs and respiratory muscles, oxygenates and purifies the blood stream, removes phlegm, cleanses the sinuses and the nadi or subtle nerve channels, soothes and tones the nervous system, improves thoracic stretch ability, broadens the chest, improves digestion, massages the abdominal viscera, and calms and concentrates the mind (James Hewitt, 1985). Pranayama helps to maintain the flow of pure blood which tones the nerves, brain, spinal cord and cardiac muscles thus maintaining their efficiency (Iyengar, 1981).Therefore Vital capacity, was selected as physiological variable for the present Study.
Meaning of Vital Capacity The maximal volume of air that can be commandingly breathed out from the lungs taking after a maximal close. The score of vital capacity was taken from the dial of the spirometer which was recorded in $1/100^{th}$ of a litter.

II. RESEARCH METHODOLOGY

A. Objective of the study

The purpose of the study was to find out the effects of selected Yogic practices on vital capacity among active college men students.

B. Hypothesis

It was hypothesised that 10 weeks of Pranayama training would significantly improve vital capacity among college students.

C. Selection of Subjects

For this present investigation, ten subjects in experimental group from Pondicherry University Community College, Puducherry, India were randomly selected. All the subjects were homogeneous with regard to age and anthropometric measurement. Their age ranges from 21 to 23 years.

D. Experimental Period

The selected subjects underwent 10 weeks of Yogic training, daily 45 minutes 5 days in a week was given in the morning session as scheduled in the Table I.

©IJRASET: All Rights are Reserved

Table - I

S.N.	Schedule of Training	Duration
1.	Chandra Pranayama	5 minutes
2.	Surya Pranayama	5 minutes
3.	Nadi shodan	10 minutes
4.	Kapalabhati	10 minutes
5.	Bhastrika Pranayama	10 minutes
6.	Savasana	5 minutes
Total duration		45 minutes

A pre and post test was taken for analysis and paired t-test was used.

E. Statistical Tools Used

For this study,'t' test was applied to find out the mean difference between pre and post training situations of experimental group.

F. Results on Vital Capacity

The purpose of present study was to find out the relative effects of varied Pranayama practices on physiological variable of Vital capacity, the total number of subjects in this study were 10, who were divided as experimental group. Ten subjects in experimental group from Pondicherry University Community College, Puducherry, India. All the 10 subjects were homogenous with regard to age and anthropometric measurements. After the initial test, the experimental group underwent rigorous Pranayama training for ten weeks. Data were collected from each subject at two times of before training and after training. The data were statistically analyzed for significance using paired't' test.

The results of 10 weeks of Yogic training were given in Table II.

Table – II

Means of Vital Capacity for Experimental group before and after Yogic Training for Ten weeks

Sl. No	Vital Capacity	N	Mean	S.D	Std. Error
1	Before training Score	10	2.57	0.15	0.05
2	After training Score	10	3.57	0.98	0.31
3	Paired Differences		1.01	1	0.32
4	Per cent Change		39.22		
5	Paired 't'		3.14**		
6	Df		9		
7	Sig. (2-tailed)		0.01		

Source: Computed ** P < 0.01

** Significant at 0.01 level

Vital capacity is measured in liters

Table 1 shows the mean values of experimental group before and after pranayama training period. From the above table it is inferred that after ten weeks of pranayama training there was marked increase in means level of vital capacity among the experimental group. The ten weeks of pranayama training has enhanced the vital capacity of the subjects on an average of 39.22 per cent. Thus the pranayama training shows its influence in producing an increased level of vital capacity among the experimental subjects.

©IJRASET: All Rights are Reserved | SJ Impact Factor 7.538 | ISRA Journal Impact Factor 7.894 |

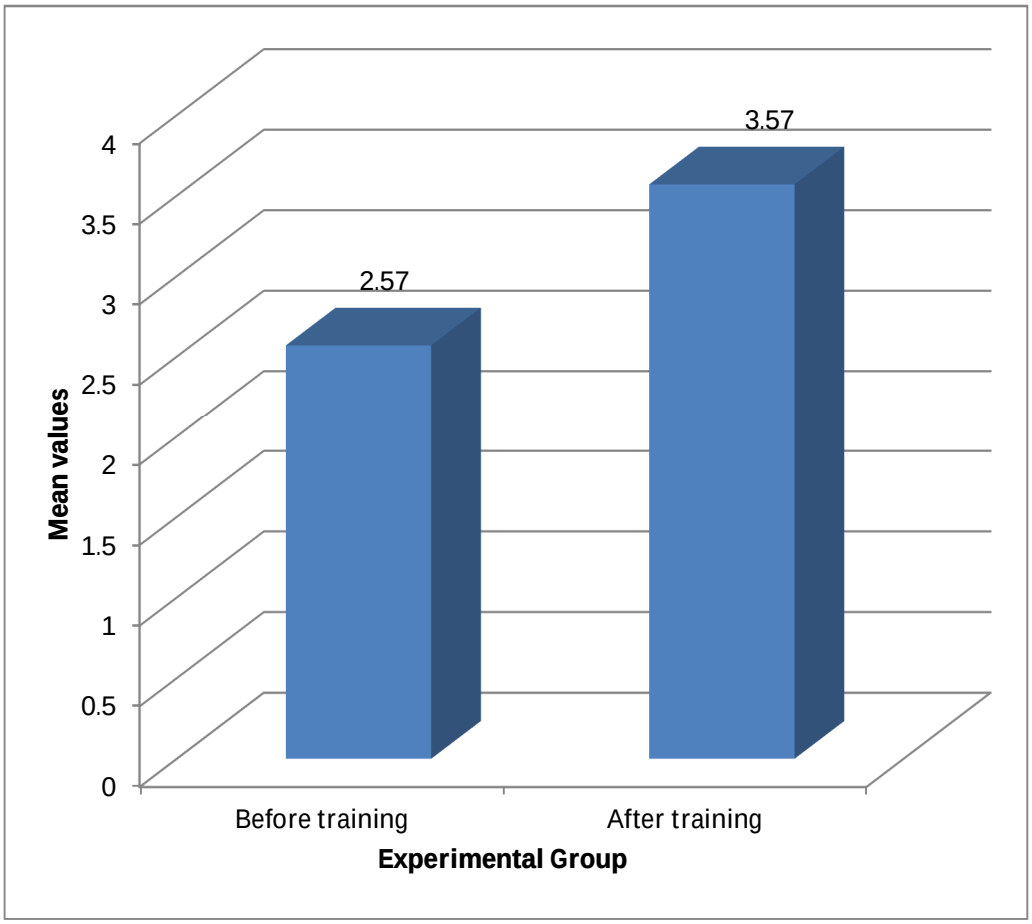


Figure 1 is Graphical representation showing mean values of vital capacity for experimental group before and after training.

G. Discussion of Findings on Vital capacity

The result of the study shows that the experimental training significantly increased the Vital capacity.
The following reports agree with the results of the present study.
Eight weeks of Bhastrika pranayama improved the vital capacity of the selected subjects (Balinjinder Singh, 2010).
Forty five days of daily practices of Nadi Sodana pranayama improved the Vital capacity (Sivapriya et al., 2010)
Long term pranayama training have shown improvements in Vital capacity
Ten weeks of Nadi shodhana pranayama training improved the vital capacity (Sukhadeve Sing et al., 2011).

H. Discussion on Hypothesis

"Ten weeks of pranayama practices would significantly improve the vital capacity among college students."
Ten weeks pranayama training improved significant elevation in the level of Vital capacity of the experimental groups. This result was in accordance with the hypothesis. Hence the hypothesis was accepted. Remarkable changes occurred on vital signs where P value of >0.01, was obtained which indicates a good improvement on vital capacity. This change occurred due to the synchronized effect of alveoli and increase of unused space in the lungs. When increased capacity of lungs occurs it causes paired oxygen production to lungs and also to all parts of the body. So each and every cell get re-energized due to the effect and fatigability of cells gets reduced So to increase the possibility of expanding the like force i.e. oxygen this study was taken and with this study yogic pranayama technique was selected, implemented and good outcome demonstrated.

III. CONCLUSION

On the basis of the results obtained by statistically analyzing the data on vital capacity, of experimental group before and after pranayama training it may be concluded that, the pranayama training significantly increased the vital capacity of the selected subjects.

BIBLIOGRAPHY

Books

[1] Arunachalam, K. 1976. Pranayama, Madurai: Tamilnadu Natural Cure Association.

[2] Iyyengar, B.K.S. 1981. Light on Pranayama, London: Unwin Paperbacks.

[3] Kuvalayananda Swami. 1966, Pranayama, Bombay: Popular Prakashan.

[4] Satya Prakash Saraswati. 1975. Patanjala Raja Yoga, New Delhi; S. Chand & Co. (Pvt.) Ltd.,

[5] Sivanand Swami, 1985. Yogic Home Exercise, Bombay: D.B.Taraporevala Sons & Co. Pvt. Ltd., N.D.

Journals & Periodicals

[6] Badshah Ghosh & Binod Chowdhary (2015) "Effect of Nadi Sodhana and Bastrika Pranayama on Selected Physiological Variables of Tribal Female" International Educational E-Journal, {Quarterly}, ISSN 2277-2456, Volume-IV, Issue-IV, Oct-Nov-Dec 2015

[7] Bal BS (2010). Effect of anuloma viloma and bhastrika pranayama on the vital capacity and maximal ventilator volume. J. Phy. Educ. Sport Manage. 1(1), 11-15.

[8] Bhole, M.V. and Gharote, M.L. (1977) Effect of Yogic Treatment on Breath Holding Time in Asthmatics. Breathe holding capacity increased by 15 seconds in 35 asthmatics after one month of yogic treatment program. Yoga Mimamsa, Vol. XIX: 1; 47-52; 1977.

[9] Birkel, D.A. & Edgren, L. (2000). Hatha yoga: improved vital capacity of college students. Alternative Therapies in Health and Medicine. 6(6), 55-63.

[10] Candy Sodhi, Sheenasingh and P.K. Dandona, (2009) A study of the effect of yoga training on pulmonary functions in patients with bronchial asthma, Indian J Physiol Pharmacol 2009; 53 (2) : 169–174

[11] Chanavirut R, Khaidjapho K, Jaree P, and Pongnaratorn P, (2010). Yoga Exercise Increases Chest Wall Expansion and Lung Volumes In Young Healthy Thais, Department of Physical Therapy, Faculty of Associated Medical Sciences, Khon Kaen University, Khon Kaen 40002, Thailand.

[12] Farida Munawar, Rizwan Ahmed Khan Niazi, Aniqa Mumtaz, Sundus Khan, Ammara Ansar, Sagheer Ahmed, Rais Nawaz (2011) "Predicted and recorded vital capacity in students of shalamar medical and dental college, lahore" Pak J Physiol 2011;7(2)

[13] Gopal, K.S. Bhatnagar, O.P., Subramanian, N and Nishith, S. D. (1973). Effect of Yogasanas and Pranayamas on Blood Pressure, Pulse Rate and Some Respiratory Functions. Ind. J. Physiol. Pharmacol., 17: 72 – 276.

[14] Joshi LN, Joshi VD, Gokhale LV (1992). Effect of short term 'Pranayama' practice on breathing rate and Ventilator functions of lung, Indian J. Physiol. Pharmacol. 36(2): 105-108.

[15] Jyoti Sahebrao Kale1, Ramesh R. Deshpande1, Nilesh T. Katole (2016). The effect of Sudarshan Kriya Yoga (SKY) on cardiovascular and respiratory parameters or respondence to: Jyoti Sahebrao Kale, International Journal of Medical Science and Public Health Received February 23, 2016. Accepted March 23, 2016 Vol.5(10)

[16] Knowles, Cheryl J.; Hamilton, Kathryn 1.(2004) Effects of yoga poses and breathing exercises on vital capacity in a healthy middle-aged man APTA CSM 2004 Feb 4-8 Nashville, TN Physical Therapy, UAB, Birmingham, AL, USA.Level of Diabetic Patients. 1 st International Conference Yoga & Research'' December 28th – 30th, 175-177.

[17] Kundu Uday Bhanu (2014) "A study on the influence of asanas and pranayama on vital capacity of school going children" Int. National. Journal of Physical Edn. 7(1) Apr., 2014 7-11

[18] Makwana, K., N. Khirwadkar and H.C. Gupta. (1988). Effect of Short Term Yoga Practice on Ventilator Function Tests'', Indian Journal of Physiol. Pharmacol., 32 (3): 203 – 208. Med. Assoc., 220: 206.

[19] Pratik Akhani, Siddharth Banode, Nirupama Shah,(2019). "Effect of 4 weeks' yoga practice on respiratory function tests in young adults," National Journal of Physiology, Pharmacy and Pharmacology. March 22, 2019 Vol.9(6) p.493.

[20] Sandeep Garg, Sukhdev Chandla (2016) "Effect of Nadi Shodhan Pranayama on Pulmonary Functions" Department of Physiology, Pt. B.D. Sharma PGIMS, Rohtak-124001, India. Corresponding Author: Sandeep Garg Received: 25/02/2016 ISSN: 2249-9571.

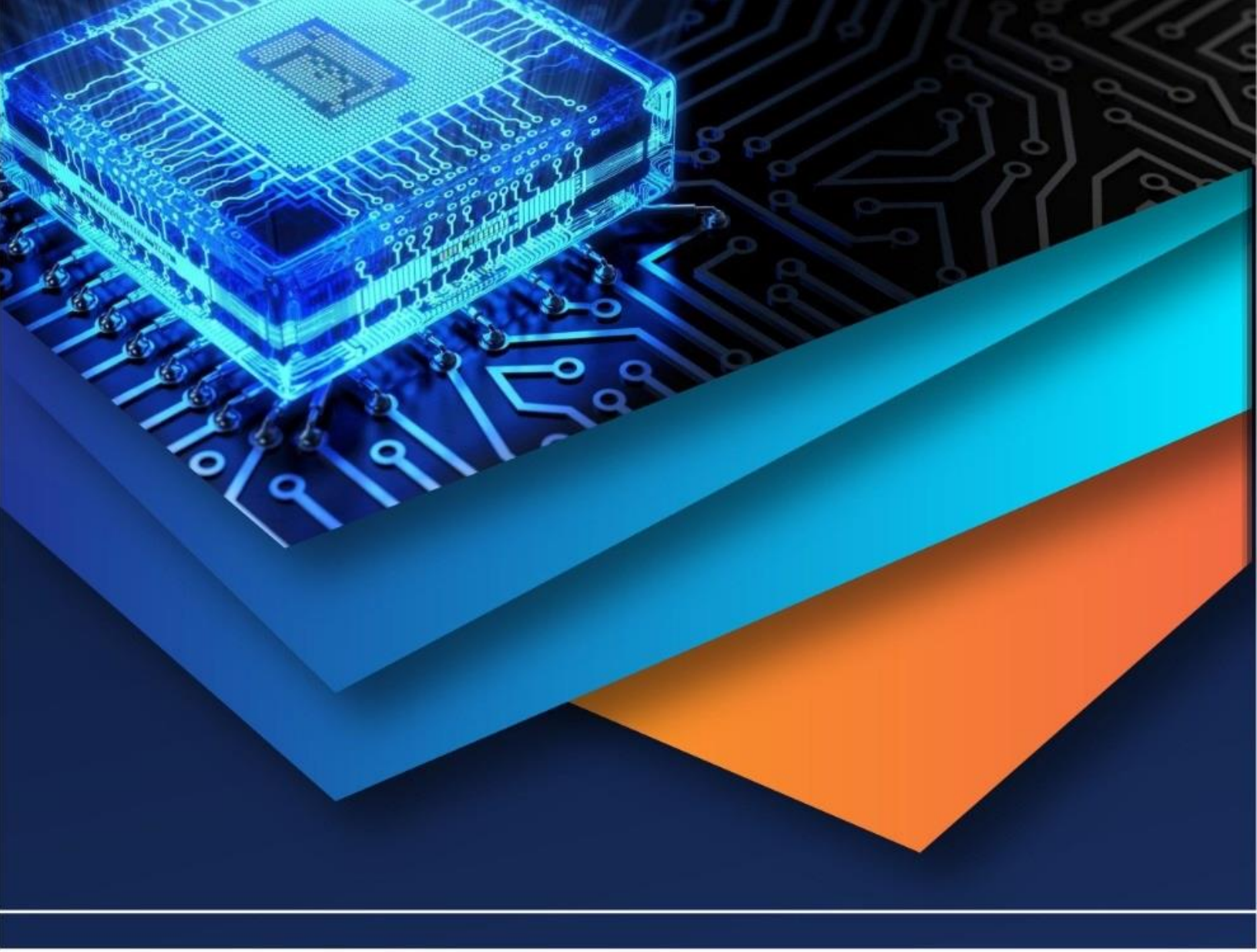
[21] Selvamurthy W, Nayar HS, Joseph NT, Joseph S. (1983). Physiological effects of yogic practice. NIMHANS J., 1: 71-80.

[22] Sheetal Panwar, Ashutosh Chourishi and Jayant Makwana (2012) "Efeect of pranayama (yoga) on pulmonary function test of Young healthy students."ISSN 0975-6299 Int J Pharm Bio Sci 2012 Oct; 3(4): (B) 12 – 16.

[23] Sivapriya D V., Suba Malani S, Shyamala Thirumeni. (2010) Physiology Effect of Nadi Shodhana Pranayama on Respiratory Parameters in School Students. Recent Research in Science and Technology 2010, 2(11): 32-39 ISSN: 2076-5061

[24] Sukhdev Singh Vishaw Gaurav1 and Ved Parkash (2011) "Effects of 6-week nadi-shodhana pranayama training on cardio-pulmonary parametrs" Journal of Physical Education and Sports Management Vol. 2(4), pp. 44-47, August 2011. Available online http://www.acadjourn.org/jpesm ISSN 1996-0794 ©2011 Academic Journals

[25] Vinayak.P.Doijad, Dr.Anil.D.Surdi. (2012) "Effect of short term yoga practice on pulmonary function tests." Indian Journal of Basic & Applied Medical Research; June 2012: Issue-3, Vol.-1, P. 226-230



10.22214/IJRASET

45.98

IMPACT FACTOR: 7.129

IMPACT FACTOR: 7.429

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Call : 08813907089 (24*7 Support on Whatsapp)