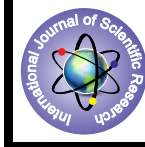


A Study To Assess The Effect of Yoga Therapy on Selected Lung Parameters in Subjects with COPD



Yogic Science

KEYWORDS : COPD, Lung age, Yoga Therapy

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ABSTRACT

"A Study to assess the effect of yoga therapy on selected lung parameters in subjects with COPD" conducted KSRP 7TH Battalion Assaigoli, Mangalore. 20 subjects with COPD were randomly selected for the current study. Among, 10 were in experimental group and other 10 were in control group. Another 10 subjects were selected for control group. The experimental group was given with selected yogic practices for one hour daily, from 7.00 am to 8.00am for a period of 45 days. The session included a series of Asanas, Pranayamas, and Relaxation techniques. The control group was not given any of these. FVC, FEV and Lung age readings were recorded for both the groups before and after the study. The results of various tests were analysed through student 't' test and have been compared for the two groups. After Yoga therapy, the experimental group showed a significant improvement in FVC, FEV and Lung age at a level of significance $p < 0.05$. There was no significant change in Control group. This depicts that the regular practice of the selected yogic techniques improve the function of lungs in the experimental group subjects.

Introduction

Health is the greatest asset in human life and one should cherish it with utmost care, let he may succumb to disease. Every human society, be it rural or urban, industrial or technologically advanced, is affected extremely by pollution of the air. Atmospheric pollution due to the increase in the concentration of gases other than oxygen in the air is responsible for various respiratory illnesses like, dust allergy, Cough, Cold, Noses block, Abnormal breath, Asthma, COPD [Chronic Obstructive Pulmonary Disease]. And Psychogenic [E.g. anxiety], Emotional imbalance and Excretion are the triggering factors for the Lung Function disturbances.

Breathing sustains life, but natural breathing brings health and happiness. It clears the mind and calms all the emotions and releases the vitalizing flow of energy within us. Many people with serious respiratory ailments have found a solution in Yoga. As the mind is calmed the hyper reactivity that causes diseases such as bronchial asthma and nasal allergy is reduced. Pranayama, an important aspect of Yoga, helps in strengthening the immune system, so chronic infections are less likely. Regular practice of Pranayama helps in improving the mechanical efficiency of our breathing and makes the most of our lung capacity.

Increasing incidence of respiratory illness in modern times has triggered studies of how yoga can help in handling this problem. Various studies have revealed that regular practice of Yoga can prevent and cure respiratory illness. Yoga is used as preventive, promotive and curative measured in the treatment of various respiratory disorders as various practices like Kriyas, Asanas, Pranayamas, Meditation and Relaxation techniques. This helps to relief the broncho-constriction, strengthens the lungs, improves the lung capacity and thus effectively used in the management of respiratory functions, hence here is a small effort to study the effect of Yoga practices on Lung Functions.

Objective:

To find out the impact of yoga therapy on lung functions of subjects with COPD.

Variables

Independent Variable : Selected Yogic practices

Dependent Variable : FVC, FEV and Lung age

MATERIALS AND METHODS

The present study was conducted to assess the effect of yoga therapy on lung functions of the subjects with COPD. 20 volunteer subjects with age group 25-60 years were randomly selected for the study. They were classified in to two groups i.e Experimental and Control with 10 subjects each. They were comparatively new to yogic practices. The Control group continued with normal lifestyle. The Experimental Group was offered selected yogic practices, six days per week at the KSRP 7TH Battalion, Assaigoli, Konaje, Mangalore. This practical session utilized a standard sequence of selected Asanas, Pranayamas, and Relaxation Techniques, taking appropriate precautions. A Paired "t" test was employed in the study to analyse the significance of the result statistically.

The following Yogic practices taught to Experimental group for a period of 45days. Svastikasana, Vajrasana, Supta vajrasana, Simhasana Tadasana I, Trikonasana, Parsvakonasana, Pascimotanasana, Purvotanasana, Pavanamuktasana, Bhujangasana, Shalabhasana, Dhanurasana, Viparitarakarani, Ujjayee, Anuloma Viloma, Bhastrika

RESULTS

All the subjects under study were tested before and after 45days of yoga training. The result shows an overall improvement in FVC, FEV and Lung age in Experimental group. Tables I & II shows the improvement in the parameters for every individual of Experimental group, but not such significant improvement in the Control group. Some of the subjects in the Experimental group reduced their dose of bronchodilators. This shows that functioning of Lungs and overall health has improved in the Experimental group compared to the Control group. Therefore, in general we can analyze the result as follows:

- ♦ As far as FVC and FEV1 are concerned, 10 out of 10 subjects of Experimental group showed remarkable improvement.
- ♦ Lung age of the subjects of experimental group reduced significantly.

TABLE: 1 The Values of FVC, FEV and LUNG AGE of Experimental Group

Parameter	Mean of diff.	SD		T Value	P value	Sig
		Before	After			
FVC	-1.099	0.4094441	0.6078825	-4.6796	0.001153	HS
FEV	-1.067	0.6078825	0.3627687	-4.8828	0.000868	HS
LUNG AGE	16.8	12.36887	14.49943	5.2162	0.000552	HS

HS-Highly Significant

TABLE: 2 The Values of FVC, FEV and LUNG AGE of Control Group

Parameter	Mean of diff.	SD		T Value	P value	Sig
		Before	After			
FVC	0.173	0.3174009	0.6061133	0.698	0.5028	NS
FEV	0.09	0.2430935	0.564038	0.3965	0.701	NS
LUNG AGE	-1.5	9.357113	13.67276	-0.339	0.7424	NS

NS-Non Significant

DISCUSSION

The present study reveals that the concerned variables of Lung Function Test have been rationalized in terms of the hypotheses that the Experimental group will outperform the control group due to 45 days of yogic interventions. The results could best depicted that, there is significant improvement at a level of significance $p < 0.05$ in FVC with a significant p value 0.001153, for FEV $p = 0.000868$, Lung Age $p = 0.000552$. When Compared to the Experimental group, the Control group has not shown any such significant changes after the study. This reveals that the Experimental group has been benefited more in terms of various variables are concerned. The rationale for the yogic treatment could be offered in the following manner.

A study on effect of yoga on COPD patients showed that lung function parameters (FVC, FEV, and Lung Age) improved after the practice of yoga and indicated that, yoga may be a useful form of therapy for COPD. The results of the present study allow a few fairly firm conclusions. Significant, steady and progressive improvement in key objective variables such as FVC and FEV only in the yoga group but not in the control group indicates the efficacy of yoga. This is further substantiated by the significantly greater improvement in quality of life in the yoga group than in the control group. Another possible explanation for the role of yoga in improving the functioning of Lungs and in reducing the mast cell degranulation could be based on the frictional stress from air flowing through narrowed airways damaging the airway mucosa and thereby perpetuating airway inflammation and airway obstruction. At high air flow rates, high values of the frictional stress could damage the airway wall, especially during episodes of cough, and particularly when the mucosa is inflamed and friable as it is in asthmatic patients. The slow and gentle breathing in some of the Pranayamas may reverse the process by reducing the frictional stress, and thereby stabilizing the mast cell degranulation. The yogic practices will remove the excess phlegm, cleanses the nerve channels, purifies the blood stream, and regenerates the liver, spleen and pancreas.

The present study is an attempt with the Digital Spirometer, Helios 401, to get an accuracy and reliable data for the investigation into the mechanism by which yoga helps for the healthy functioning of Lungs. Although there are several studies available on the efficacy of yoga in bronchial asthma and several other diseases, studies have to reach a critical mass before they can influence practice. Further, in case of yoga, very few of the studies are randomized controlled trials. Because of the dilution of a few Research papers by several less rigorous trials, and also because of widespread scepticism with which disciplines like yoga are approached by practitioners of conventional medicine, the

impact of the Research papers is inadequate. Further, it would help to integrate mind-body approaches like yoga into the practice of scientific medicine if the trials not only show that these approaches work, but also how they work in terms of measurable basic mechanisms.

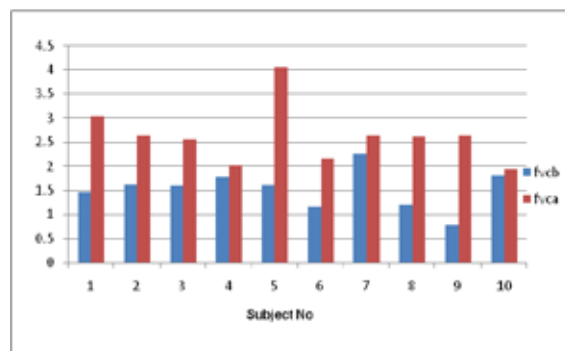
It is evident from the above result that all the 10 patients responded to the treatment positively, as the tables show the improvement. Hence it is proved that "Yogic practices have a significant impact in the improvement of lung functions." But the variation of the rate of success could be depended on the regularity of the practice, lifestyle, dietary change and the chronicity of the disease. Thus, we can say that Yoga therapy is fully fruitful for those who adhere to the regular practice. However, in practice the decline in compliance increases steeply as the study gets longer, possibly owing to the time commitment required from the subjects.

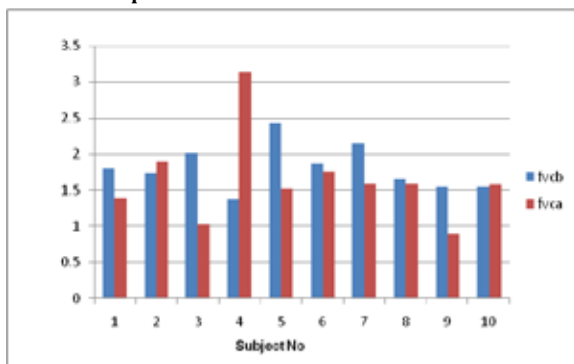
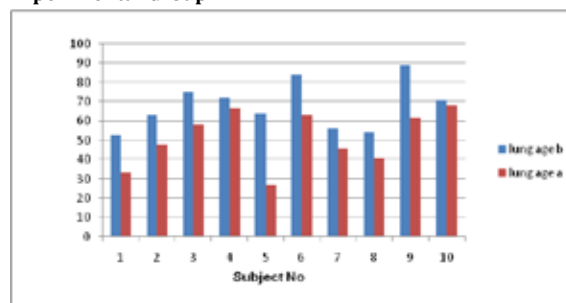
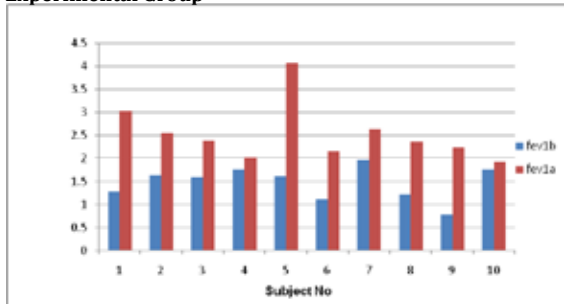
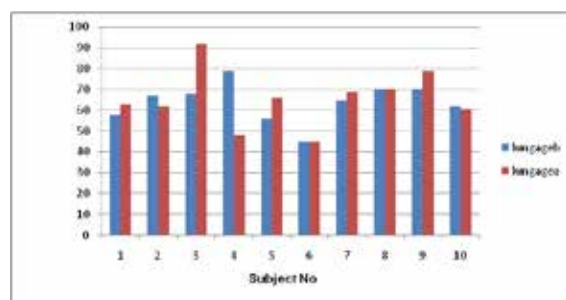
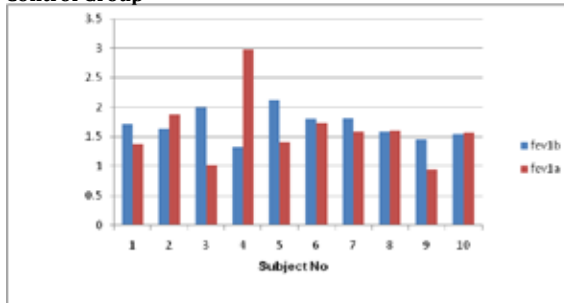
CONCLUSION

The result obtained from the present study can be concluded as below:

1. Yogic practice s work efficiently to improve the functioning of lungs.
2. Yoga can work as a therapeutic tool for the disorders of the lungs.
3. Selected Yogic Practices administered in a more controlled set up under strict vigilance may yield better results.

Graphical Representation of FVC, result before and after the Yogic practice Experimental Group



Control Group**Graphical Representation of Lung age, result before and after the Yogic practice****Graphical Representation of FEV1, result before and after the Yogic practice****Control Group****Control Group****REFERENCE**

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