

## **Impact of Hatha Yoga Sadhana and Natya Yoga Training on Forced Expiratory Volume among Men and Women**

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### **ABSTRACT:**

The purpose of the study was to find out the Impact of Hatha Yoga Sadhana and Natya Yoga Training on Forced Expiratory Volume (FEV1) among Men and Women. The findings of the study were exploring the status of Hatha Yoga Sadhana and Natya Yoga Training among Men and Women. The findings of the study will be helpful for further research studies, also helpful for Men and Women. For the study, 60 members of Men and Women selected from Chennai, at Vethathiri Maharishi College of Yoga, between the age group of 20 to 28 years, and they were randomized 15 members in each group. FEV1 was measured by Digital spirometer, pre and post were conducted before and after training. Subjects were divided into three groups as such in Group-I acted as Control Group, Group-II acted as Hatha Yoga Sadhana, and Group-III were undergone into Natya Yoga Training. Data were collected and scored and analysed in to 't' test and ANCOVA. The results revealed that there was significant difference in men and women, as well as there was significant difference when compared in to control group. And also there was significant difference when comparing Hatha Yoga Sadhana and Natya Yoga Training groups.

### **OBJECTIVES OF THE STUDY:**

To find out whether there may be any significant differences between Hatha Yoga Sadhana and Natya Yoga Training on Forced Expiratory Volume among Men and Women.

### **STATEMENT OF THE PROBLEM:**

The purpose of the study was to find out the Impact of Hatha Yoga Sadhana and Natya Yoga Training on Forced Expiratory Volume among Men and Women.

### **DELIMITATIONS:**

- The study would be delimited to the Men and Women from Chennai city at Vethathiri Maharishi College of Yoga only.
- The age of subjects would be ranged from 20 to 28 years only.
- The independent variables would be restricted to Hatha Yoga Sadhana and Natya Yoga Training.
- The duration of the training will be 8 weeks.

### **LIMITATIONS:**

- Medical treatment of the subjects was not under control.
- Environmental factors, climatic conditions, and socio-economic status were not to be taken into consideration.
- Certain factors like lifestyle, body structure, personal habits, and motivational factors were not to be taken into consideration for this study.
- Drugs taken by the subjects not to be taken into account.
- During the treatment period, the patient's occupation or their daily activities were not to be considered.

### SIGNIFICANCE OF THE PROBLEM:

- The findings of the study would explore the status of Hatha Yoga Sadhana and Natya Yoga Training among Men and Women.
- The findings of the study will be helpful for further research studies, also helpful for Men and Women.

### HYPOTHESES:

- It is hypothesized that there may be significant differences in Forced Expiratory Volume variable for Men and Women due to Hatha Yoga Sadhana and Natya Yoga Training than the control group.
- It is hypothesized that there would be or may not be any significant differences in Forced Expiratory Volume variable for Men and Women due to Hatha Yoga Sadhana and Natya Yoga Training.
- It is hypothesized that there may be significant differences in Hatha yoga Sadhana.
- It is hypothesized that there may be significant differences in Natya Yoga Training.

### MATERIALS AND METHODS:

For the study, 60 members of Men and Women selected from Chennai, at Vethathiri Maharishi College of Yoga, between the age group of 20 to 28 years, and they were randomized 15 members in each group.

Group I	Control group (CG)
Group II	Hatha Yoga Sadhana Group (HYSG)
Group III	Natya Yoga Training Group (NYTG)

### DISCUSSION AND FINDINGS

Birkel and Edgren, determined the effects of yoga postures and breathing exercises on vital capacity. Used the Spiropet spirometer, researchers measured vital capacity. Vital capacity determinants were taken near the beginning and end of two 17-week semesters. No control group was used. Midwestern university yoga classes taken for college credit. Participants were A total of 287 college students, 89 men and 198 women. Invented Subjects were taught yoga poses, breathing techniques, and relaxation in two 50-minute class meetings for 15 weeks. Main outcome measures were Vital capacity over time for smokers, asthmatics, and those with no known lung disease. The study showed a result was statistically significant ( $P < .001$ ) improvement in vital capacity across all categories over time. It was concluded not known whether these findings were the result of yoga poses, breathing techniques, relaxation, or other aspects of exercise in the subjects' life. The subjects' adherence to attending class was 99.96%. The large number of 287 subjects is considered to be a valid number for a study of this type. These findings are consistent with other research studies reporting the positive effect of yoga on the vital capacity of the lungs.

Vanita Sharma et.al., 2022 described that Yoga is an ancient Indian system and largest surviving philosophical system in the world. It is a novel and emerging discipline in broad category of mind-body medicine. Yoga, a spiritual discipline, induces positive health and its effect on lung function test can be used clinically as a therapeutic intervention in lung diseases like asthma. The study was conducted to assess the effect of yoga on dynamic lung volumes. The lung function tests were conducted on 50 healthy male and female controls not practicing yoga in the age group of 30-50 years and sex and age-matched 50 healthy subjects practicing yoga for 5 years. The lung volumes recorded on electronic Medspiror were forced vital capacity (FVC), forced expiratory volume in 1 second (FEV1), maximum voluntary ventilation (MVV), peak expiratory flow rate (PEFR), forced expiratory volume in 3 seconds (FEV3) respiratory rate (RR) and breath holding time (BHT). The study demonstrates increase in FVC, FEV1, MVV, PEFR, FEV3 and breath holding time and decrease of respiratory rate in yoga performers. Conclusion: Yoga has a therapeutic value and doctor with yogic attitude is likely to transmit to the patient a positive attitude and calm disposition to achieve better results in healing various diseases with less medication.

Vijayakumar, Nancy Abraham, 2021 aimed of the examination was to think about the equilibrium among Yoga and Bharathanatyam rehearsing understudies. To accomplish this motivation behind the examination 20 Yoga rehearsing

understudies were chosen from Peace and Cure Yoga Center, Puducherry and 20 Bharathanatyam rehearsing understudies were chosen from Sri Saravanan Dance School, Puducherry. Understudy's age went from 10 to 15. The nature and significance of this examination was disclosed to the subjects furthermore, they communicated their ability to take an interest as subjects for this examination. They were named into two gatherings which was Yoga rehearsing understudies (YRS) considered as Group I and Bharathanatyam rehearsing understudies (BRS) considered as gathering II. Equilibrium is the measure variable. Equilibrium was estimated by Stork Stand test. The gathered information were genuinely investigated by 't' test. The information was examined utilizing SPSS factual bundle. The degree of certainty was fixed at 0.05 degree of importance. From the consequences of the examination it very well may be presumed that there is huge contrast among YRS and BRS on balance, and Pulmonary parameters. In this way, the outcome plainly shows that the equilibrium in the Yoga rehearsing understudies was better compared to the Bhathanatyam rehearsing understudies.

**Table-1**

SR.NO	DEPENDENT VARIABLES	TOOLS	UNITS
1.	Forced Expiratory Volume 1	Spirometry	Liters

**Table- II**

Showing Mean, SD and t-value of FEV1 in Men and Women of Pre and Post test

Variable	Test	Pre- test			Post -Test			
		N	Mean	SD	N	Mean	SD	N
	MEN	45	2.24	1.76	45	2.40	1.62	45
	WOMEN	45	2.56	1.67	45	3.75	1.42	45
t-value					t-value			
Mean difference		.323			1.35			
Significant at 0.05 level		0.516			2.425			

**Table – III**

ANALYSIS OF COVARIANCE OF DATA ON FEV1 BETWEEN PRETEST AND POSTTEST OF CG, HYSG AND NYTG FOR MEN

Test	CG	HYSG	NYTG	Sov	Sos	df	MS	Obtained 'F' ratio
Pretest Mean	2.25	2.57	2.32	B	6.66	2	3.30	2.63
SD	1.76	1.67	1.85	W	51.91	41	1.27	
Posttest Mean	2.26	3.61	3.20	B	14.72	2	7.36	3.27*
SD	1.56	1.28	1.27	W	94.67	41	2.25	
Adjusted Post Mean	2.30	3.75	3.40	B	9.97	2	4.98	9.33*
				W	21.90	42	0.53	

\*Significant at 0.05 level of confidence

The table value required for significance at 0.05 levels with df 2 and 41 are 3.23, 2 and 42 are 3.22 respectively. The table shows that the pretest mean value on FEV1 for CG, HYSG and NYTG, were 2.25, 2.57 and 2.32 respectively. The obtained 'F' ratio value 2.63 for pretest scores on Forced Expiratory Volume which is lesser than the table value 3.22 for significance with df 2 and 42 at 0.05 level of confidence. The posttest means values 2.26, 3.61, and 3.20, respectively. The obtained 'F' ratio value 3.27 for posttest scores on FEV1, which was greater than the table value 3.22 for significance with df 2 and 42 at 0.05 level of confidence. The adjusted posttest means values on FEV1 for CG, HYSG and NYTG, were 2.30, 3.75 and 3.40 respectively. The obtained 'F' ratio value 9.33 for adjusted posttest scores on FEV1, which was greater than the table for significance with df and 41 at 0.05 level of confidence.

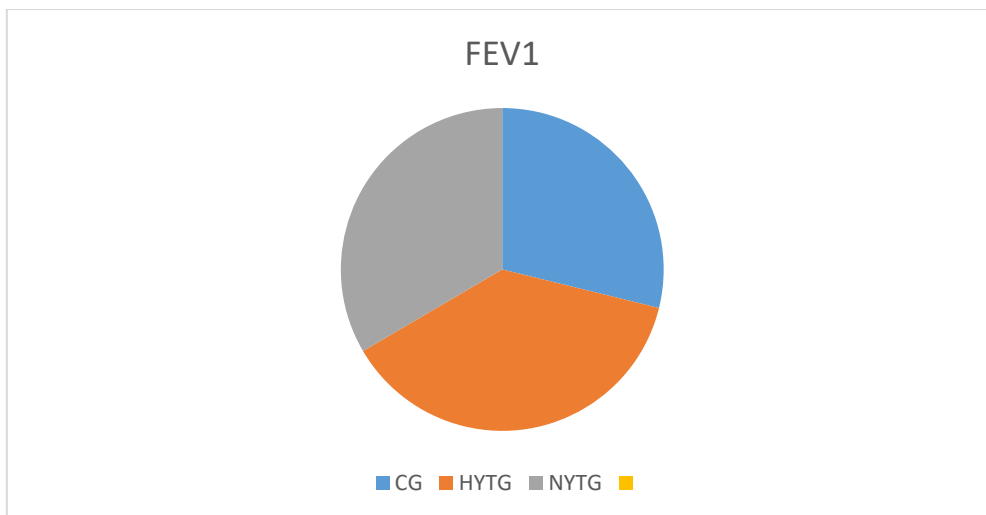
The results of the study showed that there was a significance difference among CG, HYSG and NYTG on FEV1. However, the improvement was in favor of HYSG. Since three groups were involved the Scheffe's post hoc test was applied to find out the paired mean difference if any, and it is presented in the given table

**Table – IV**  
**SCHEFEE'S POST HOC TEST FOR THE DIFFERENCE BETWEEN THREE PAIRED ADJUSTED POSTTEST MEANS OF FEV1 FOR MEN AND WOMEN OVERALL**

Adjusted post Mean Test			Mean Difference	Confidence Interval
CG	HYSG	NYTG		
2.30	3.75	-	1.45	0.76
-	3.75	3.40	0.35	0.76
2.30	-	3.40	1.1	0.76

The table shows that the adjusted posttest FEV1 mean difference of CG, HYSG and NYTG, were 2.30, 3.75 and 3.40 respectively. They were greater than the confidence interval value 0.76 at 0.05 level, which indicates that there was a significant difference among all of CG, HYSG and NYTG.

**MEAN VALUE ON FEV1 BETWEEN PRETEST AND POSTTEST OF CG, HYSG AND NYTG MEN AND WOMEN OVERALL**



**CONCLUSION:**

The research reported that there was significant improvement between men and women in t ratio, and especially that there was significant difference when training and control group. Also there was significant differences between HYSG and NYTG.

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