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Effect of Yogic Practices on Forced Vital Capacity and Life Satisfaction Among Middle Aged Asthmatic Women

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Abstract: The aim of this study was to determine the impact of yoga practises on Forced Vital Capacity and Life Satisfaction in asthmatic women of middle age. Forty middle-aged asthmatic women between the ages of 35 and 45 were randomly recruited from Chennai and divided into two groups (I and II) of 20 individuals each. On the Forced Vital Capacity and Life Satisfaction scales, it was expected that yoga practises would result in substantial changes between the asthmatic middle-aged women and the control group. At the beginning of the training programme, two groups were given a preliminary test on Forced Vital Capacity and Life Satisfaction. Group I participants engaged in Yogic exercises for 60 min, six days per week, for a total of eight weeks. Group II (Control Group) was in a state of active rest. Following the duration of the experiment, the two groups were retested on the same dependent variable. ANCOVA was used to determine the significant differences between the experimental and control groups. The significance test was specified at a level of confidence of 0.05. Due to Yogic practises, the Experimental Group demonstrated substantial differences in Forced Vital Capacity and Life Satisfaction compared to the Control Group among middle-aged asthmatic women. The hypothesis was accepted with a confidence level of 0.05. To maintain a healthy Forced Vital Capacity and Life Satisfaction, it may be inferred that Yogic activities are advantageous for middle-aged asthmatic women.

Keywords: Yogic practices, Middle age, Forced Vital Capacity, Life Satisfaction

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Introduction

Humans enter middle age, the stage of life between young adulthood and the commencement of old age. The World Health Organization estimates that 300 million individuals throughout the globe suffer from

asthma. Almost 20% of the world's asthma population is in India, where 135 billion people are afflicted. The prevalence of asthma among Indian females is 2.0%. Asthma affects more women than males, according to the statistics.

Asthma sufferers also have to deal with the additional challenges that come with age. Breathing difficulties worsen with age because of decrease in lung elasticity, a stiffening of the chest wall, and a weakening of the muscles that drive respiration. The lungs' airways are severely affected by asthma, a chronic and life-threatening non-communicable illness. Symptoms include a decrease in airflow because of narrowing, inflammation, swelling, and excess mucus production in the airways. Asthma symptoms include coughing, wheezing, shortness of breath, and chest tightness. These manifestations occur at random times and are often exacerbated by physical activity or sleep deprivation. Asthmatics are prone to sleeplessness, drowsiness throughout the day, and trouble focusing.

The study aims at finding significant difference due to practice of Yoga on Forced Vital Capacity and Life Satisfaction among Middle aged Asthmatic women. It is hypothesized that there would be significant differences due to yogic practices on Forced Vital Capacity and Life Satisfaction among Middle aged Asthmatic women than the control group.

Materials and Methods

Forty adults from Chennai, India (between the ages of 35 and 45) were chosen at random for an experimental research employing a Random Group Sampling Design. These adults were divided into two groups (I and II), each consisting of 20 participants. Group I received instruction in yogic practises for 60 min, six days a week, for a total of eight weeks, whereas group II received no such instruction and was free to lead their usual lives. Statistical analysis were used to compare the two groups based on their results from the first and final tests on a number of different physiological variables. The results of a series of physiological measurements taken before and after yoga practise were used to determine the effectiveness of the exercises. The practise of yoga involves the whole person, mind and body. Asanas (yogic postures), pranayama (breathing exercises), meditation, and relaxation are all

components (Shruti *et al.*, 2016). Breathing exercises and yoga postures improve lung function, lung capacity, and physical endurance. Forward bending exercises are good for heart and lungs since they stretch the chest muscles. If there is trouble breathing out of mouth because of an asthma attack, try bending upper back and opening the chest. Breathing more calmly and steadily is one of the many benefits of practising yoga. People with asthma may find relief from their symptoms via regular yoga practise. Subjects in Group I were given the following practises:

(1) Loosening Exercises

(2) Suryanamaskar

(3) Asana:

- Tadasana
- Artha kati chakrasana
- Artha chandrasana
- Parivartta trikonasana
- Gomukhasana
- Vakrasana
- Ushtrasana
- Baddha konasana
- Uttana mandukasana
- Marjaryasana
- Bhujangasana
- Danurasana
- Machasana
- Sethu bandasana

(4) Pranayama:

- Kapalabhati,
- Nadishodhana
- Sectional breathing
- Brahmari

(5) Pranava meditation

The participants in Group II (Control) were not given any special instructions or training, but were instead allowed to go on with their daily lives as usual.

Both groups were retested on the same set of dependent variables, including Forced Vital Capacity and Life Satisfaction, 8 weeks later. The significant differences between the experimental and control groups were analysed using the t-test. The significance threshold of this test was set at 0.05.

Results and Discussion

Forced Vital Capacity:

To test the hypothesis at the 0.05 level of confidence, we ran an Analysis of t test on the data we gathered from the two groups before and after the training period (Table 1).

The calculated F value of 16.64 exceeded the minimal threshold of 4.21. Results demonstrated that the means differed significantly as a result of eight weeks of yoga practises on Forced Vital Capacity (Singh *et al.*, 2012)

In pranayama, the self-energizing force envelops the body via extension, expansion, and control; prana is the energy. The environment around the bronchioles and the alveoli, namely the alveolo-capillary membrane, may be altered to improve gas diffusion and movement. Moreover, it has the potential to boost tissue-level oxygenation. The purpose of this investigation is to evaluate the effects of a two-month yoga intervention on bronchial asthma patients' lung functions and diffusion capacity. Patients with stable asthma were randomly assigned to either Group 1 (the Yoga training group) or Group 2 (control group). 20 patients were randomly assigned to each group. All patients had baseline and follow-up measurements of their lung function taken into account. Subjects in Group 1 improved their TLCO, FVC, FEV1, PEF, MVV, and SVC following yoga practise. There was also a notable improvement in quality of life. The effects of

pranayama and yoga breathing and stretching postures were analysed and found to include "increased respiratory stamina," "relaxed chest muscles," "expanded lungs," "increased energy," and "reduced stress."

To facilitate comprehension of the findings of this investigation, a bar chart depicting the adjusted averages in terms of Forced Vital Capacity was created (Fig. 1).

The research found that Group I had a greater increase in Forced Vital Capacity as a consequence of their Yogic practises than Group II. Hence, with a degree of confidence of 0.05, the hypothesis was accepted.

Life Satisfaction:

Analysis of t test was used to identify statistically significant difference between the two groups before and after training time, and the hypothesis was evaluated at a 0.05 level of confidence (Table 2). The calculated F value (112.13) exceeded the minimum acceptable F value (4.21). Eight weeks of yoga practises were shown to have a statistically significant effect on life satisfaction, and this effect was independent of any other factors.

Life satisfaction was investigated in relation to yoga practice in the current study. Forty people (female) were chosen at random; these people were separated into yoga practitioners and non-practitioners groups. Information was gathered using a standardised version of Proma Singh and George Joseph's life satisfaction scale. Yogic techniques were shown to have a significant effect on happiness, regardless of gender (Anshu *et al.*, 2023).

For a visual representation of the study's findings, the authors used a bar chart (Fig. 2) to illustrate the adjusted means in terms of life satisfaction.

Specifically, it was hypothesised that yogic practises among middle-aged women with asthma would lead to statistically significant

Table 1: Analysis of covariance of the means of experimental group and the control group on forced vital capacity

Tests/ Groups	Experimental group-I	Control group - II	Source of Variation	Df	"F" Ratio
Pre Test	2.64	2.62	B	1	1.85*
			W	28	
Post Test	3.40	2.74	B	1	16.67 *
			W	28	
Adjusted Post Test	3.40	2.74	B	1	16.64*
			W	27	

* Significant at 0.05 level of confidence. Table F ratio at 0.05 level, of confidence for df 1 and 28= 4.2, 1 and 27= 4.21.

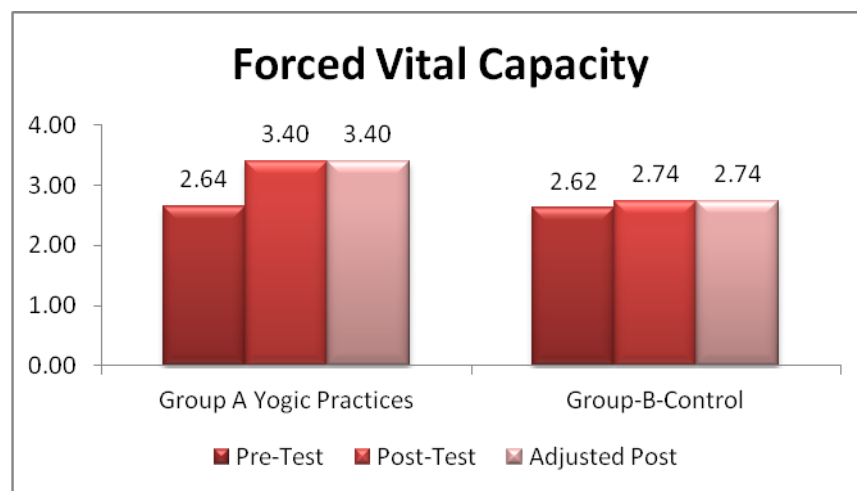


Fig. 1: Mean differences among the groups on forced vital capacity. Significant at 0.05 level of confidence. Table F ratio at 0.05 level, of confidence for df 1 and 28= 4.2, 1 and 27= 4.21.

Table 2: Analysis of covariance of the means of experimental group and the control group on life satisfaction

Tests/ Groups	Experimental group-I	Control group - II	Source of Variation	Df	"F" Ratio
Pre Test	38.33	39.67	B	1	1.16*
			W	28	
Post Test	61	38	B	1	88.67 *
			W	28	
Adjusted Post Test	61.34	37.66	B	1	112.13*
			W	27	

*Significant at 0.05 level of confidence. Table F ratio at 0.05 level, of confidence for df 1 and 28= 4.2, 1 and 27= 4.21.

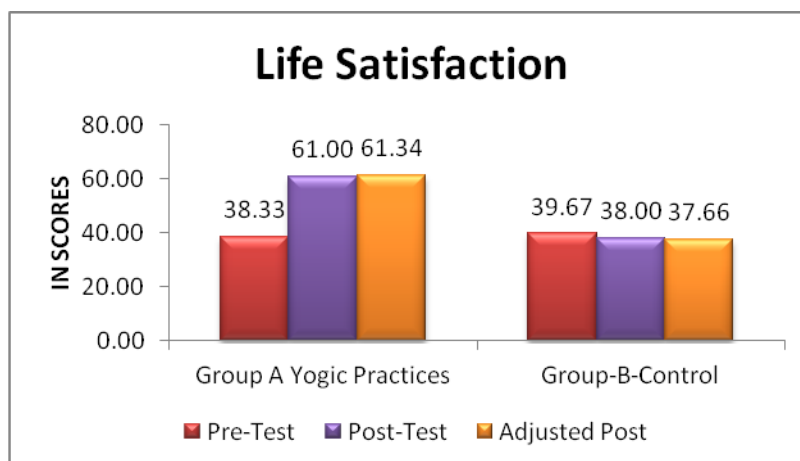


Fig. 2: Mean differences among the groups on life satisfaction. Significant at 0.05 level of confidence. Table F ratio at 0.05 level, of confidence for df 1 and 28= 4.2, 1 and 27= 4.21.

differences between the treatment and control groups on the physiologic variable of forced vital capacity (increased) and the psychological variable of life satisfaction (improved). Research conducted on middle-aged women with asthma found that yoga practises led to statistically significant improvements compared to the control group on measures of Forced Vital Capacity and Life Satisfaction.

Conclusion

There was a substantial increase in Forced Vital Capacity and an improvement in Life Satisfaction among middle-aged asthmatic women who engaged in yoga activities. Hence, middle-aged women may benefit from yoga activities in terms of maintaining Forced Vital Capacity and Life Satisfaction.

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