



## Influence of Kundalini Yoga Practices on Selected Respiratory Parameters among Women Cotton Mill Workers

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### Abstract

The purpose of the study was to find out the impact of kundalini yoga practices on selected respiratory parameters among cotton mill workers. It was hypothesized that there would be significant differences on selected respiratory parameters due to the effect of kundalini yoga practices among cotton mill workers. For the present study the 30 women cotton mill workers from Coimbatore district, Tamilnadu were selected at random and their age ranged from 20 to 35 years. The subjects were randomly assigned to two equal groups of fifteen each and named as Group 'A' and Group 'B'. Group 'A' underwent kundalini yoga practices and Group 'B' has not undergone any training. The data was collected before and after six weeks of kundalini yoga practices. The data was analyzed by applying dependent 't' test. The level of significance was set at 0.05. The respiratory parameters were analysed using respirometer and spirometer. The kundalini yoga practices had positive impact on respiratory rate, vital capacity and forced vital capacity among cotton mill workers. The experimental group showed better improvement on respiratory rate, vital capacity and forced vital capacity among cotton mill workers than the control group.

**Keywords:** Cotton Mill Workers, SKY, Respiratory Rate, Vital Capacity.

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### Introduction

Over 60 million people are employed in the textile or clothing industry worldwide. The working conditions in many cotton mills were notoriously bad. There were no guards on the large machines in the mills, so many workers could get caught or trapped. The large steam-powered Bowreah Cotton Mills opened at Fort Gloster near Calcutta by British interests in the 1820s, using British women to impart machine-spinning skills to the local workforce (Majumdar, 2012). They closed down in 1837 but reopened with Dwarkanath Tagore as a major shareholder, and by 1840 lay at the centre of a major industrial complex powered by five steam engines, that included a twist mill, foundry and a rum distillery.

A cotton mill was not a healthy place to work. The air in the mill had to be hot and humid to prevent the thread from breaking: 18 °C to 26 °C and 85% humidity was normal. The air in the mill was thick with cotton dust, which could lead to byssinosis – a lung disease. Protective masks were introduced after the war, but few workers wore them as they made them uncomfortable in the stifling conditions. The same applied to ear protectors. The air led to skin infections, eye infections, bronchitis and tuberculosis. The noise levels in a weaving shop, where the shuttles in 500 plus looms

were being thumped 200 times a minute led to levels of deafness in all who worked there. The lubrication was carcinogenic and led to cancers of the mouth and cancer of the scrotum; known as mule-spinners cancer. A mill worker could expect to work a thirteen-hour day, six days a week with two weeks off for the wakes week holidays in summer. Unsurprisingly, a series of Factory Acts were passed to attempt to ameliorate these conditions.

All yoga forms are believed to raise kundalini energy, and have their origins in the pillars and Yoga Sutra of Patanjali, a foundational yoga scripture believed to have been compiled around the 2nd century BC. Based on this foundation, most yoga forms and meditation derive their structure and discipline from the ashtanga 8 limbed approach, which provide guidelines for the austerities of practice. An earlier written mention of Kundalini Yoga is in the Yoga Kundalini Upanishad, one of the oldest scriptures of Hinduism. The Yoga Kundalini Upanishad is eighty-sixth among the 108 Muktika Upanishads, associated with the Krishna Yajurveda from India. The origin of this particular writing is difficult to substantiate because scholars disagree about the exact dates of the composition of the Upanishads, but agree that all Upanishads have been passed down through oral tradition. Some have estimated that the composition of the Yajurveda texts date as far back as between 1400 and 1000 BC (Vethathiri, 2004).

In the late 1800s into the early 1900s author John Woodroffe, an Oxford graduate, translated some

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twenty original Sanskrit texts under the pseudonym Arthur Avalon. His most popular and influential book titled *The Serpent Power: The Secrets of Tantric and Shaktic Yoga*, became a major contribution of the time to the appreciation of Indian philosophy and spirituality and the source of many early Western occult appropriations of tantra and kundalini practice. In 1935 Sri Swami Sivananda penned a detailed depiction of some historically classic Kundalini Yoga practices in a treatise called *Kundalini Yoga*. According to yogic philosophy, kundalini is a spiritual energy or life force located at the base of the spine. It is conceptualized as a coiled up serpent. Literally, kundalini or kundala is that which is coiled (Sanskrit kund, to burn; kunda, to coil or to spiral). It is believed that Kundalini yoga is that which arouses the sleeping Kundalini Shakti from its coiled base through the 6 chakras, and penetrate the 7th chakra, or crown. This energy is said to travel along the ida (left), pingala (right) and central, or sushumna nadi - the main channels of pranic energy in the body. This process can be seen depicted even today in modern medical iconography as two snakes spiraling a central staff, and although the origin of this image is more directly derived from the Caduceus of the Greek god Hermes, it may express the same or a similar principle (Vethathiri, 2004).

### Objective of the Study

1. To assess the respiratory parameters among women cotton mill workers.
2. To introduce the Simplified Kundalini Yoga techniques to women cotton mill workers for the betterment of life.

### Methodology

The purpose of the study was to find out the impact of kundalini yoga practices on selected respiratory parameters among cotton mill workers. It was hypothesized that there would be significant differences on selected respiratory parameters due to the effect of kundalini yoga practices among cotton mill workers. For the present study the 30 women cotton mill workers from Coimbatore district, Tamilnadu were selected at random and their age ranged from 20 to 35 years. The subjects were randomly assigned to two equal groups of fifteen each and named as Group 'A' and Group 'B'. Group 'A' underwent kundalini yoga practices and Group 'B' has not undergone any training. The data was collected before and after six weeks of kundalini yoga practices. The data was analyzed by applying dependent 't' test. The level of significance was set at 0.05.

**Table I.** Variables and Test

S.No	Variables	Tests
1	Respiratory Rate	Respirometer
2	Vital Capacity	Spirometer
3	Forced Vital Capacity	

### Results

The findings pertaining to analysis of dependent 't' test between experimental group and

control group on selected respiratory parameters among women cotton mill workers for pre-post test respectively have been presented in table II to III.

**Table II.** Significance of Mean Gains & Losses between Pre and Post Test Scores on Selected Variables of Kundalini Yoga Practices Group (KYPG)

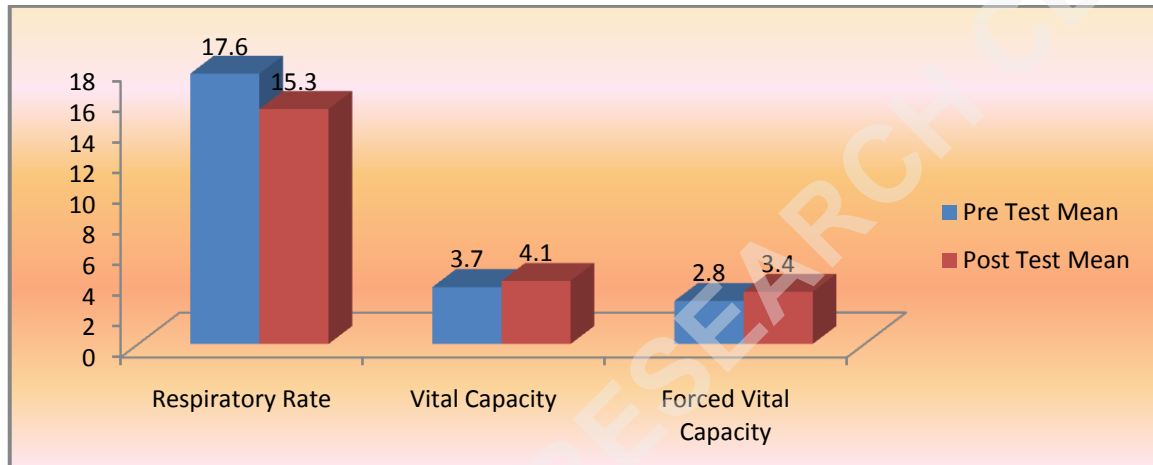
S.No	Variables	Pre-Test Mean	Post-Test Mean	Mean difference	Std. Dev (±)	σ DM	't' Ratio
1	Respiratory Rate	17.6	15.3	2.30	0.58	0.12	4.17*
2	Vital Capacity	3.7	4.1	0.40	0.08	0.02	3.57*
3	Forced Vital Capacity	2.8	3.4	0.60	0.14	0.03	7.84*

\* Significant at 0.05 level

Table II shows the obtained 't' ratios for pre and post test mean difference in the selected variable of respiratory rate (4.17), vital capacity (3.57) and forced vital capacity (7.84). The obtained ratios when compared with the table value of 2.14 of the degrees of freedom (1, 14) it was found to be statistically significant at 0.05

level of confidence. It was observed that the mean gain and losses made from pre to post test were significantly improved in respiratory parameters namely respiratory rate (2.30,  $p < 0.05$ ), vital capacity (0.40,  $p < 0.05$ ) and forced vital capacity (0.60,  $p < 0.05$ ) thus the formulated hypothesis is accepted.

**Figure I.** Comparisons of Pre – Test Means and Post – Test Means for Experimental Group in Relation to Respiratory Parameters



**Table III.** Significance of Mean Gains & Losses between Pre and Post Test Scores on Selected Variables of Control Group (CG)

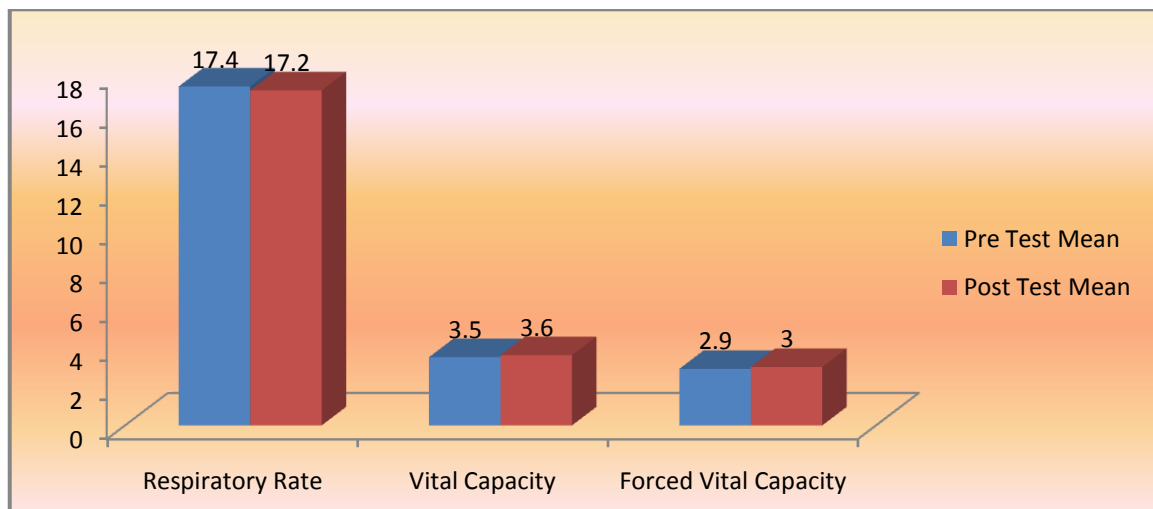
S.No	Variables	Pre-Test Mean	Post-Test Mean	Mean difference	Std. Dev (±)	σ DM	't' Ratio
1	Respiratory Rate	17.4	17.2	0.20	0.21	0.03	0.56
2	Vital Capacity	3.5	3.6	0.10	0.02	0.002	0.74
3	Forced Vital Capacity	2.9	3	0.10	0.04	0.001	1.21

\* Significant at 0.05 level

Table III shows the obtained 't' ratios for pre and post test mean difference in the selected variable of respiratory rate (0.56), vital capacity (0.74) and forced vital capacity (1.21). The obtained ratios when compared with the table value of 2.14 of the degrees of freedom (1,

14) it was found to be statistically significant at 0.05 level of confidence. It was observed that the mean gain and losses made from pre to post test were not significantly improved in respiratory parameters.

**Figure II.** Comparisons of Pre – Test Means and Post – Test Means for Control Group in Relation to Respiratory Parameters



### Discussions on Findings

In case of respiratory parameters i.e. respiratory rate, vital capacity and forced vital capacity the results between pre and post test has been found significantly higher in experimental group in comparison to control group. This is possible because due to regular kundalini yoga practices which may influence respiratory parameters in women cotton mill workers. The findings of the present study have strongly indicates that kundalini yoga practices of six weeks have significant effect on selected respiratory parameters i.e., respiratory rate, vital capacity and forced vital capacity of women cotton mill workers. Hence the hypothesis earlier set that kundalini yoga practices programme would have been significant effect on selected respiratory parameters in light of the same the hypothesis was accepted.

### Conclusions

On the basis of findings and within the limitations of the study the following conclusions were drawn:

1. The kundalini yoga practices had positive impact on respiratory rate, vital capacity and forced vital capacity among women cotton mill workers.
2. The experimental group showed better improvement on respiratory rate, vital capacity and forced vital capacity among women cotton mill workers than the control group.

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