

# Role of Yogic Intervention on Pulse Rate and Breathing Flow Rate of Housewives

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**Abstract:** Background: Women's plays an important role of homemakers in Indian family system. It is very important to pay attention on her health otherwise, could disturb whole family. Therefore, a need has developed to find a Yogic solution for her health problems. Objective: The purpose of the study was to find out the role of yogic practices on selected physiological variables such as Pulse Rate, Breathing Flow Rate (BFR) of housewives. Methods and procedures: Eighty housewives, with the age range of 35 to 45 years are randomly selected as subjects of the study. They are formed in two groups 40 strength each. The Experimental group was given intervention of Yoga Practice module of 30 min duration for 90 days, 5 days a week. The control group was not given any intervention. For statistical analysis pre and post research design was used here, paired t-test was used to calculate the significance of difference. Results: The statistical analysis found that after the intervention the Post-Test result of Experimental group, the Pulse Rate  $t=2.16$  was found significant at 0.05 level of significance and the Breathing Flow rate  $t=5.66$  was found significant at 0.01 level of significance. Whereas for Post-Test result of control group the Pulse Rate was  $t=0.19$  was found not significant and Breathing Flow Rate was  $t=1.63$  was found not significant. Conclusion: Result from this study shows that scientific Yoga Practice enhances muscular strength and body flexibility, promote and improve respiratory function, promote recovery from and treatment of addiction, reduce stress anxiety and enhance overall wellbeing.

**Keywords:** Yogic Intervention, Breathing Flow Rate, Pulse Rate

## 1. Introduction

There is widespread concern that women's increasing involvement in multiple roles (job plus family responsibilities) may harm their physical health. Typically women are responsible for house hold management, multiple roles end up with more duties, time pressure and stress. These increases their risks of acute and chronic health problems and decreases their ability to spend time on health problems. Human life is based upon the body he keeps. All the activities of life are done with the help of body. Nature has created human to perform various activities efficiently. Yoga is a form of mind-body fitness that involves a combination of muscular activity and an internally directed mindful focus on awareness of the self, the breath and energy. Regular practice of yoga promotes strength, endurance, flexibility and facilitates characteristics of friendliness, compassion and greater self-control, while cultivating a sense of calmness and well-being. Yoga will also require to observe how an individual feels both mentally and physically and to be aware of the self-development. The aim is not to develop muscles only but also to promote wellness, good health and well-being of mind, body & spirit.

Yoga is a perfect practical system of self – culture. Yoga is an exact science. It aims at the harmonious development of the body, the mind and the soul. Yoga is the turning away of the senses from the objective universe and the concentration of the mind within. Yoga is eternal life in the soul or spirit. Yoga aims at controlling the mind and its modifications. The path of yoga is an inner path whose gateway is your heart. (Swami Vishnu, 1999)

Kluwer Academic (2002) studied Increase in Voluntary Pulse Rate Reduction Achieved Following Yoga Training. Yoga practice has been shown to improve the regularity of

breathing (Telles & Srinivas, 1999), relaxation (Telles, Narendran, Rajhuraraj, Nagarathna, & Nagendra, 1997). A subsequent study examined the effect of one month of yoga practice on the ability to voluntarily reduce the pulse rate without external cues (Telles S, Joshi M, Dash M, Raghuraj P, Naveen KV, Nagendra HR 2004). Thus, the practice of yoga may facilitate the conditioning of visceral responses to instrumental cues. The present results suggest that yoga practice may have an "augmenting effect" in pulse rate biofeedback treatments if practiced simultaneously. While this study found an improvement in the ability of participants to reduce their pulse rate in response to external cues following yoga training.

Br Med (1985) studies in their research on Yoga for bronchial asthma: a controlled study. Fifty three patients with asthma underwent training for two weeks in an integrated set of yoga exercises, including breathing exercises, suryanamaskar, yogasana (physical postures), pranayama (breath slowing techniques), dhyana (meditation), and a devotional session, and were told to practice these exercises for 65 minutes daily. They were then compared with a control group of 53 patients with asthma matched for age, sex, and type and severity of asthma, who continued to take their usual drugs. There was a significantly greater improvement in the group who practiced yoga in the weekly number of attacks of asthma, scores for drug treatment, and peak flow rate. This study shows the efficacy of yoga in the long term management of bronchial asthma, but the physiological basis for this beneficial effect needs to be examined in more detail. L. N. Joshi, V. D. Joshi, L. V. Gokhale (1992) has made following study in his Effect of Short Term Parana yam practice on Breathing Rate and Ventilator Functions Of lungs. Thirty-three normal male and forty-two normal female subjects, of average age of 18.5 years, underwent six weeks course in 'Pranayama' and their ventilator lung functions was studied before and after this

practice. They had improved ventilatorflexion's in the form of lowered respiratory rate (RR), and increases in the forced vital capacity (FVC), forced expiratory volume at the end of 1st second (FEV<sub>1</sub>), maximum voluntary ventilation (MVV), peak expiratory flow rate (PEFR-lit/sec), and prolongation of breath holding time. Jyotsana et al (2001) studied the effect of yoga on cardiovascular system in subjects above 40 years. It was observed that significant reduction in the pulse rate occurs in subjects practicing yoga ( $p < 0.001$ ). The difference in the mean values of systolic and diastolic blood pressure between study group and control group was also statistically significant. The systolic and diastolic blood pressure showed significant positive correlation with age in the study group as well as in the control group. To conclude that cardiovascular parameters alters with age but these alterations are slower in persons aging with yoga. Muralidhara and Ranganathan(1982) concluded that yoga training improves physical efficiency as indicated by significant increase in cardiac recovery index measured by Harvard step test.

## 2. Research Methodology

### Statement of problem:

The purpose of the study was to find out the role of Yogic practice module on selected physiological variables such as Pulse Rate, BFR of housewives.

### Sample:

A total of 80 women (housewives) ranging in age from 35 to 45 years was selected from the people of Indirapuram, district of Ghaziabad Uttar Pradesh (India). This sample consisted of 40 housewives in experimental group and 40 housewives in control group. A randomized sample was selected. Both the group was matched in terms of age (35 to 45 years), education and socio economic status. Only Female participants were considered and minimum education was at least intermediate passed.

### Criteria for selection of sample:

Following criteria's was made while studying effect of Yogic Practice on Pulse Rate and Breathing Flow Rate of housewives:

- Willing to participate
- Physically fit
- Not taking any medication
- At least intermediate passed.

### Hypothesis:

- It was hypothesized that there would be a significant effect of yoga on housewives in Pulse Rate.
- It was hypothesized that there would be a significant effect of yoga on housewives in Breathing Flow Rate.

### Intervention Schedules

Following intervention program was designed and given to the experimental group while control group was not given any such treatment. The Experimental group participants were given the Yogic Practice module of 30 minutes. The routine begins in the morning and goes for 5 days a week excluding Saturday and Sunday. The total duration of intervention was of three months i.e. 90 days.

**Table 1: Yogic Interventions**

Group 1: 40 Experimental (EG)	Participants will be given following Yoga Practice module daily : <input type="checkbox"/> Joint Movement Exercise – 10 min <input type="checkbox"/> Pragyia Yoga Asana – 3 rounds – 10 min <input type="checkbox"/> NaadishodhanPranayaam – 10 min
Group 2: 40 Control (CG)	Participants will be given No Intervention

### Design:

Experimental and control group research design was used in the present study in this study

### Description of tools

For the present study, the most essential physiological variables such as Pulse Rate, BFR was selected. The standards test and equipment breathing flow meter was used to measure BFR. The Roosmax PF 120A Peak Flow meter with color-coded indicator was used to measure Breathing flow Rate. The normal peek flow will vary according to height age and gender. Adults should achieve readings of 400-700 liters per minute and Standard methods was used to measure Pulse Rate. The MidiTechOxygard Pulse Oxymeter OG-01 Finger Tip was used to measure Pulse Rate of subject. The normal Pulse Rate for adults ranges from 60 to 100 beats per minute.

### Procedure

The initial reading at 0<sup>th</sup> day was recorded for PR and BFR as a PRE test for both the groups. The Experimental Group was provided the session of Yogic Intervention for 3 months, 5 days in a week while on other days they were instructed to practice techniques by themselves. The control group was not provided any intervention after 3 months. The post reading was recorded as POST result at 90<sup>th</sup> day for both groups. The scores of groups was statically analyzed using paired T-Test to the test of significance of adjustment level.

## 3. Statistical Analysis

The collected data was tabulated and analyzed. The initial values (Pre Test) on the 0<sup>th</sup> day were compared with the final values (Post Test) obtained on 90<sup>th</sup> day of measurement. Paired t- test was used for the statistical analysis.

**Table 2: Experimental and Control Group pre & post values for PR and BFR**

Group	Variables	PRE	POST	r	SED	t-value	Level of
		Mean ± SD	Mean ± SD				Significance
Experimental (n=40)	Pulse Rate	83.1 ± 12.9	79.61 ± 9.59	0.61	1.62	2.16	Significant at 0.05
Control (n=40)	Pulse Rate	83.27 ± 13.19	83.37 ± 13.97	0.97	0.5	0.19	Not Significant
Experimental (n=40)	Breathing Flow Rate	279.15 ± 47.93	318.78 ± 55.82	0.64	7.0	5.66	Significant at 0.01
Control (n=40)	Breathing Flow Rate	263.71 ± 50.6	270.54 ± 56.42	0.88	4.18	1.63	Not Significant

df=39

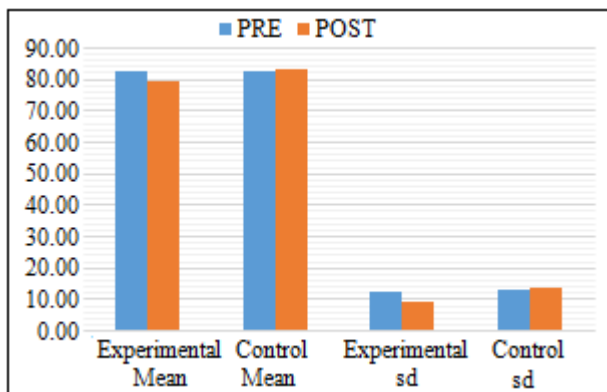


Figure 1: Comparison Mean and SD of both group pre & post value for Pulse Rate

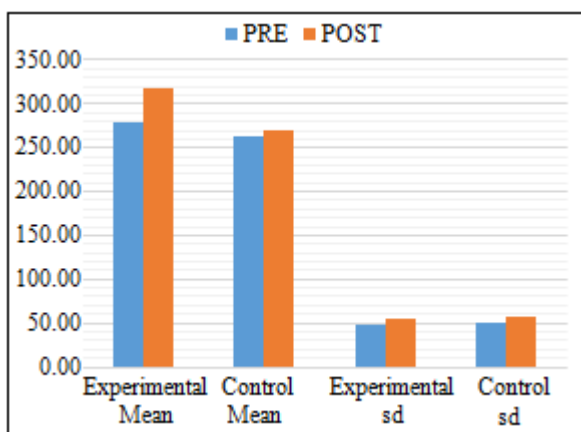


Figure 2: Comparison Mean and SD of both group pre & post value for Breathing Flow Rate

#### 4. Result

The given Table 2 variable PR defines mean & standard error of mean (Mean  $\pm$  SD) of Pre Test and Post Test on level of Pulse Rate of the Control Group were consecutively found to be  $83.27 \pm 13.19$  and  $83.37 \pm 13.97$ . The correlation ( $r$ ) 0.97 and  $SE_d$  is 0.50 and obtained t-value is 0.19 which is statistically not significant at 0.05 significance level of confidence.

The mean & standard error of mean (Mean  $\pm$  SD) of Pre Test and Post Test on level of Pulse Rate of the Experimental Group were consecutively found to be  $83.1 \pm 12.9$  and  $79.61 \pm 9.59$ . The correlation ( $r$ ) 0.61 and  $SE_d$  is 1.62 and obtained t-value is 2.16 which is statistically significant at 0.05 significance level of confidence.

The given Table 2 variable BFR defines mean & standard error of mean (Mean  $\pm$  SD) of Pre Test and Post Test on level of Breathing Flow Rate of the Control Group were consecutively found to be  $263.71 \pm 50.6$  and  $270.54 \pm 56.42$ . The correlation ( $r$ ) 0.88 and  $SE_d$  is 4.18 and obtained t-value is 1.63 which is statistically not significant at 0.01 significance level of confidence.

The mean & standard error of mean (Mean  $\pm$  SD) of Pre Test and Post Test on level of Breathing Flow Rate of the Experimental Group were consecutively found to be  $279.15 \pm 47.93$  and  $318.78 \pm 55.82$ . The correlation ( $r$ ) 0.64 and  $SE_d$

is 7.00 and obtained t-value is 5.66 which is statistically significant at 0.01 significance level of confidence.

The above-obtained results concludes that the regular practice of scientific Yoga Practices has significantly improved the Pulse Rate and Breathing Flow Rate of the Experimental group.

#### 5. Conclusion

Based on the result of present study, it is confirmed that regular practice of scientific Yoga Practices improves and balance Pulse Rate and Breathing Flow Rate among housewives.

To the best of our knowledge no study has been carried out showing effect of long term yoga on these parameters which are also influenced by age. However numerous longitudinal studies on effect of short term yoga on Pulse rate & PFR system in various age groups showed similar results (Gopal, 1973; Josef et.al 1981; Wenger et. al. 1961; Nayar et al, 1975).

The improvement in the level of significance for the Experimental group shows a development made with the practice of Yogic Practice Module. The Pulse rate t-value is 2.16 which is statistically significant at 0.05 significance level of confidence and BFRt-value is 5.66 which is statistically significant at 0.01 significance level of confidence. Health is vital for housewives and most often they are over burden with excessive household activities. Regular Yogasanas help in improving physical health of housewives and helps in achieving a greater level of happiness, harmony, health and balance in their life. This in further boost the value of Love and Togetherness in their family & relationships.

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