



## THE EFFECT OF SELECTED PRANAYAMAS AND TRANSCENDENTAL MEDITATION ON RESTING PULSE RATE OF HIGH BLOOD PRESSURE PATIENTS

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### ABSTRACT

**Background:** Yoga has a very positive effect on our health . It has been proven by research and science. Pranayama means regulation and restraint of breath. The ancient sages of our India have discovered such breathing process that keep the mind and body free of tension. The Transcendental Meditation technique release accumulated stress in your body, improves your health, and reverses the effects of aging.

**Materials and Methods :** The study was Conducted on thirty two (n=32)male high blood pressure patients were selected at random from Farrukhabad (U.P.) in the age group ranging between 35 to 50 years. Further, the subjects were grouped into three experimental groups and a control group (Eight subject each) randomly. After giving 12 weeks training the Post test was taken .Sphygmomanometer used to measure blood pressure during training.**Results :** The result of the study indicated that there was no significant differences Between experimental groups and a control group on pulse Rate and it was also found that there was no significant improvement on pulse rate due to the Pranayama and Transcendental Meditation training .**Conclusion :** In case of Resting Pulse Rate Pranayama , Transcendental meditation and Combination of Pranayama and Transcendental Meditation had not shown significant improvement among experimental groups as compared to the control group.

**KEYWORDS:** Pranayama , Transcendental Meditation, Pulse Rate .

### INTRODUCTION :

Stress is a dangerous problem of the world, which affects social, mental, physical and emotional health. Pranayama has been reported beneficial in treating stress disorders, lowering blood pressure, increase flexibility of body parts, reduces signs of oxidative stress and improving spiritual power, (Upadhyay et al. 2008)

Yogic exercises and scientific means for strengthening of all living and atrophying muscle fibers and tissues. This system teaches how to awake new life pulsation in active tissue. It develops will power, attain the unity of mind. (Yogendra 1971). Pranayama is a science of respiration .It consists of three phases purack ,Khumback ,Rechak .(K.S. Joshi 1967) . People who practice the Transcendental Meditation Technique say they have less stress, better sleep, less tension and more energy in their life. Research shows that they have lower medical cost, less hospitalization and fewer doctor visits (Preidt 2005). Due to the meditation, there are special changes in the internal functions of the body and every cell of the body is filled with energy, the pleasure of filling energy in the body increases the communication of peace and enthusiasm.

### REVIEW OF LITERATURE

Thomas,et al. (august1984) conducted a study to evaluate the effectiveness of six week of endurance training progressive relaxation, meditation on the physiological response to stress. Thirty seven

healthy female subjects were randomly assigned to one of the four treatment groups: 1. Control: no specific training, 2. 2 minutes/day, 3. Meditation : 2 minutes/day, 3. days/week, 4. Combination: Exercise plus meditation. From the results it would appear that the two groups trained in progressive relaxation meditation showed a greater effect on heart rates and blood pressure than exercise group

Murugesan et.al.(2000) said, thirty three hypersensitives, examined with four variables including systolic and diastolic blood pressure, pulse rate and body weight. The subjects were randomly assigned to three group pranayama group, a group who received medical treatment by the physician of the said hospital and control group. Pranayama was offered in the morning and in the evening with 1 hr/session for 11 weeks, Medical treatment comprised drug intake everyday for the experimental period. The result of pre-post test revealed that both the treatment stimuli (i.e. pranayama and drug) were effective in controlling the measures of hypertension.

Patel (1925) treated twenty hypertensive patients by pranayama followed up monthly for 12 months. Significant reductions in blood pressure (BP) and antihypertensive drug requirements were satisfactorily maintained in the treatment group. Repetition of B.P. measurements and increased medical attention did not reduce BP significantly in control patients.

### **MATERIALS AND METHODS**

The purpose of the study was to find out the effect of selected pranayama and Transcendental Meditation on primary high blood pressure patients. 32 male high blood pressure patients were selected at randomly from Farrukhabad (U.P.). The subjects age ranged from 35 to 50 years Further, The subject were grouped into three experimental groups and a control group. The requirements of the study were explained to all the subjects. Control group did not practice in any special training programme.

#### **Training Programme:**

Pre –Test and Post –test randomized group design was employed in the study. the study was conducted for a period of twelve weeks in the month of July, August and September .32 Subjects were assembled in the vedic Ashram , Farrukhabad (U.P.) at 6:00 am on alternate Three days per week , Four groups comprising of 8 subjects each were formed i.e. three experimental groups and one control group .At the end of twelve weeks the post-test was conducted for all to four groups.

The practice session conducted for a period of 45 minutes in The morning i.e. 6.00am to 6.45 am experimental group A (pranayama group ) performed selected pranayama, experimented group B(T.M group) performed technique of T.M, group C performed combination of pranayama and T.M for 45 minutes on alternative days and control group did not practices in any special training programme.

#### **List of selected Pranayama (With out retention of breath)**

- 1) Ujjayi Pranayama
- 2) Sitali Pranayama
- 3) Bhastrik Pranayama
- 4) Anulom Vilome Pranayama
- 5) Sikari Pranayama

#### **Statistical Analysis**

Analysis of Covariance (ANCOVA) was applied to see the significant difference if any between experimental groups and control group.

The level of significance was set at 0.05 level.

## RESULT AND DISCUSSION

**TABLE 15**  
**ANALYSIS OF CO-VARIANCE OF RESTING PULSE RATE FOR PRIMARY HIGH BLOOD PRESSURE**  
**PATIENTS OF EXPERIMENTAL GROUPS AND CONTROL GROUP**  
**(In beats per minute)**

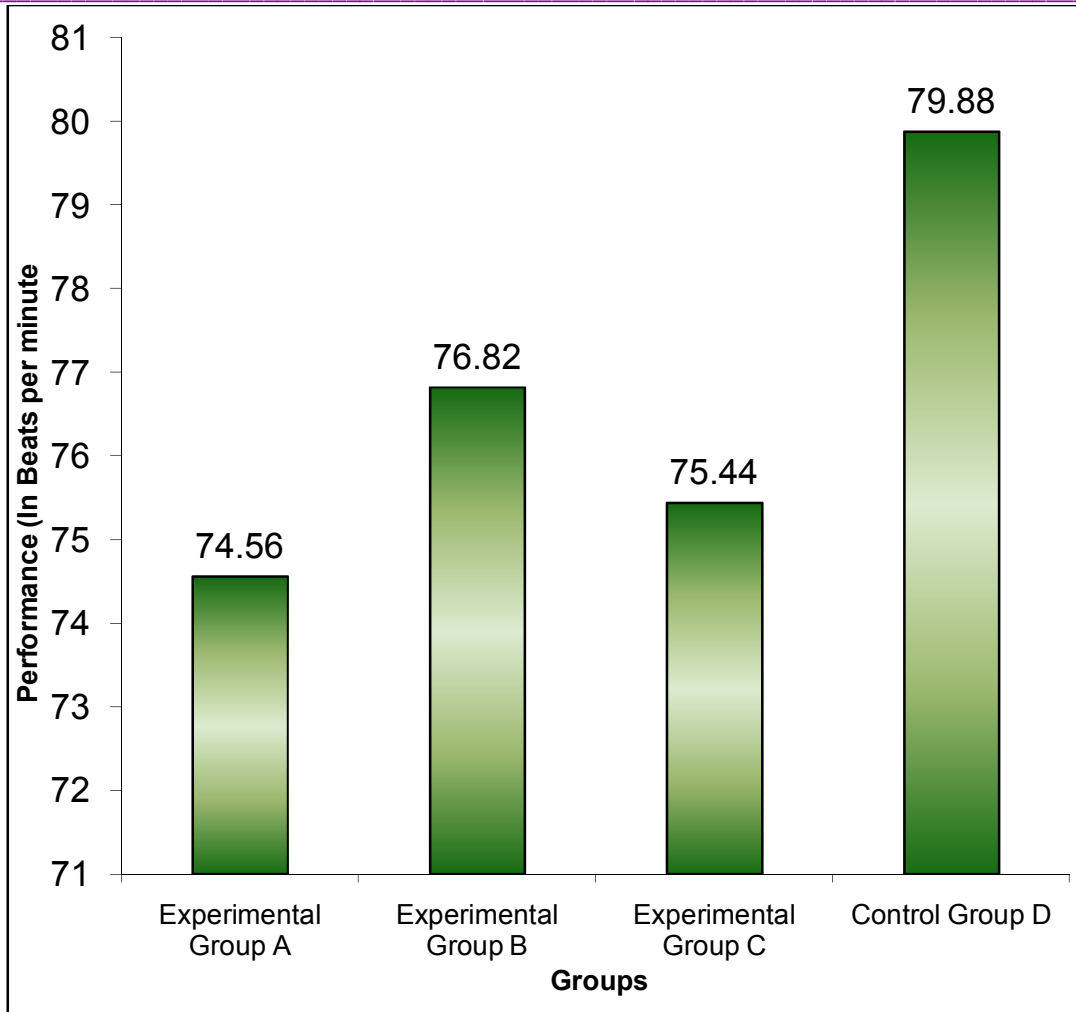
	Pranayama Group	Transcendental Meditation Group	Pranayama and Transcendental Meditation Group	Control Group	Source of Variance	Sum of Squares	d.f.	Mean sum of squares	F-ratio
<b>Pre Test Means</b>	80.875	82	81.375	82	Between groups	7.125	3	2.375	0.131
					Within groups	506.75	28	18.098	
<b>Post Test Means</b>	75.25	80.125	77.625	81.5	Between groups	183.25	3	61.083	2.46
					Within groups	496.25	28	17.723	
<b>Adjusted Post Test Means</b>	74.563	76.817	75.438	79.880	Between groups	82.123	3	27.374	2.50
					Within groups	17.775	27	0.658	

Tab.  $F_{.05}(3,28)=2.95$ ,  $F_{.05}(3,27)=2.96$

\* Significant at 0.05 level

Table-15 of analysis of co-variance of Resting Pulse Rate for Pranayama, Transcendental Meditation, combination of Pranayama and Transcendental Meditation and Control Group indicates insignificant F-ratio of 0.131 and 2.46 for the pre test and post test means respectively. However, the F-ratio for the adjusted post test means reveals a value of 2.50 which was not significant for being less than the required F-value of 2.96 at 0.05 level of significance. This indicates there was no significant difference from the adjusted post test means of Pranayama, Transcendental Meditation and combination of Pranayama and Transcendental Meditation and Control group in Resting Pulse Rate.

The graphical representation of mean comparison of Resting Pulse Rate for Primary High Blood Pressure patients of experimental groups and control group after twelve weeks of experimental treatment is presented in figure 6.



**Fig 6. Graphical representation of mean comparison of Resting Pulse Rate for Primary High Blood Pressure Patients of Experimental Groups and Control Group**

**CONCLUSION**

In case of Resting Pulse Rate Pranayama, Transcendental meditation and combination of Pranayama and Transcendental Meditation had not shown significant improvement among experimental groups as compared to the Control group.

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