

Effect of Six Months Bhramari Pranayama Training on Resting Pulse Rate of Middle Standard Students

^a J.P.Sharma, ^bSantosh Kumar Giri, ^cRita Jain, ^dAruna Gulati

^a Associate Professor, I.G.I.P.E.S.S, University of Delhi, New Delhi, India

^b Ph.D. Research Scholar, DPESS, University of Delhi, New Delhi, India

^c Associate Professor, I.G.I.P.E.S.S, University of Delhi, New Delhi, India

^d Associate Professor, I.G.I.P.E.S.S, University of Delhi, New Delhi, India

Abstract

The Purpose of this study was to see the six months Training Effect of Bhramari Pranayama on Resting Pulse Rate of Middle Standard students. Total 70 School Going Students were selected as subjects for this study. These subjects were randomly divided into two equal groups i.e Control (35) and Experimental (35). The ages of the subjects were ranged between 10-14 years and they were studying in class Sixth to Eighth. The Bhramari Pranayama Training was executed only to Experimental Group in addition to their daily tasks for six months i.e Monday to Saturday i.e., 30 Minutes a day in the Morning. The Control Group did not participate in any Yogic Training (Bhramari Pranayama) but continued with their daily schedule. The Pre-Test was conducted on both the groups before to start six months Bhramari Pranayama Training and just after completion of six months Bhramari Pranayama Training, similarly the Post-Test was conducted on both the groups. The Automatic Digital Blood Pressure Monitoring Machine was used to collect the data. The collected raw data was analyzed by computing descriptive statistics followed by Independent and Paired sample t- Test to find out the significant Equality of variance and Significant differences between the Pre-Test data and the Post-Test data respectively. Regarding Resting Pulse Rate of Control Pre-Test V/S Experimental Pre-Test, the calculated value of Independent t was .781(P=.437, P>0.05) which was not significant at 0.05 level of alpha. Further regarding Resting Pulse Rate of Experimental Pre-Test V/S Experimental Post-Test the calculated value of dependent t was 6.24 with df34 which was statistically significant at 0.05 level of alpha(p<0.05). Therefore, it was observed that six months Bhramari Pranayama Training made significant variation on Resting Pulse Rate of the subjects of Experimental Group.

KEYWORDS: Yoga, Bhramari Pranayama, Resting Pulse Rate, Middle Standard Students.

INTRODUCTION

Now a days, for the sake of development, we are getting into a trap of inactive lifestyle. Due to that a big number of new dangerous diseases have ruined our modern life. Because day by day most of the people going away from the nature. In modern time physical inactivity becomes a way of life. Therefore today's man faces many new physiological problems such as high Resting Pulse Rate. It is the serious health problem. Due to high Pulse Rate or Resting Pulse Rate, other very serious diseases were also

attacked to the human being such as Depression, Stroke and mental disorder related diseases. Hence, peoples are searching the ways to keep themselves healthy and disease-free. In this direction Yoga can play a beneficial role for them. Because many experiments have done on yoga and result of these experiment revealed that people got cured from various diseases by doing its regular practice.

Yoga is an ancient science of living & it is originated in India. According to Indian Rishis Yoga is a practical method for the complete physical, mental and spiritual transformation of an individual. Maharishi Patanjali is known as the father of Modern Yoga, according to him Yoga has eight elements and Pranayama is the fourth element of yoga. It is composed from two Sanskrit words: Prana means 'Vital force' and Yama means 'to control'. Pranayama helps in controlling all the functions of breathing. Pranayama is the art of breath manipulation. Thus pranayama is a series of techniques that aim at stimulating and increase the vital energy in the body. Thus yoga can be used to bring about a state of relaxation of body and mind from the unwanted problems.

STATEMENT OF THE PROBLEM

The purpose of the present study was to see the Effect of Bhramari Pranayama on Resting Pulse Rate of Middle Standard students.

METHODOLOGY

Total Seventy students of class VI – VIII age ranging between 10-14 years of Rastra Shakti Vidyalaya, (Hastsal) Uttam Nagar, Delhi - 110059 (India) were randomly selected as subjects for this study. Further these subjects were randomly divided into two groups' i.e Experimental Group and Control Group. Each group consisted of 35 subjects. Only Experimental Group has been briefed about the Yoga Training Programme. Six months Training of Bhramari Pranayama was administered only to the Experimental Group Subjects of Control Group did not take part in Bhramari Pranayama Training, but they were engaged in their regular routine work. The scholar himself administered the Yoga Training Programme. Resting Pulse Rate was selected as dependent variables for this study. The data was collected prior to start Bhramari Pranayama Training i.e known as Pre-Test and at the end of the Bhramari Pranayama Training i.e Post-Test from both the groups by using Automatic Digital Blood Pressure Monitoring Machine. The collected raw data was analysed by computing descriptive statistics followed by Independent and Paired Sample t- Test.

TRAINING PROTOCOL

The Bhramari Pranayama Training was executed to only Experimental Group for six months. The Training was executed by scholar himself in the morning from 8.00 Am onwards for 30 minutes for six days in a week at the Basket Ball Court of Rashtia Shakti Vidyalaya,(Hastsal) Uttam Nagar, New Delhi - 110059 (India).All Sundays and Gazetted Holidays has been observed as Training off days. There was no change in the routine of Control Group. But Experimental Group was given Yogic Training Programme (i.e. Bhramari Pranayama) along with their routine work and each subject of the Experimental Group was ready to learn Bhramari Pranayama.

TOOL USED

Automatic Digital Blood Pressure Monitoring Machine was used to measure the Resting Pulse Rate of the subjects in the unit of beats per minute.

RESULTS

Table No - 1

Descriptive statistics about Resting Pulse Rate of Control Pre-Test v/s Experimental Pre-Test.

Variable	Group	Phase	N	Mean	SD	SEM
RPR	Control	Pre Test	35	82.45	12.23	2.06
	Experimental	Pre Test	35	84.57	10.32	1.74

The above table reveals that there were 35 subjects in each group i.e Control and Experimental have been tested primarily (Pre-Test) on Resting Pulse Rate. The mean score of Control Group and Experimental Group regarding Resting Pulse Rate was 82.45 and 84.57 respectively. Further the standard deviation score of Control group and Experimental group was recorded as 12.23 and 10.32 respectively, which is also reflected in the graphical representation as Figure no- 1

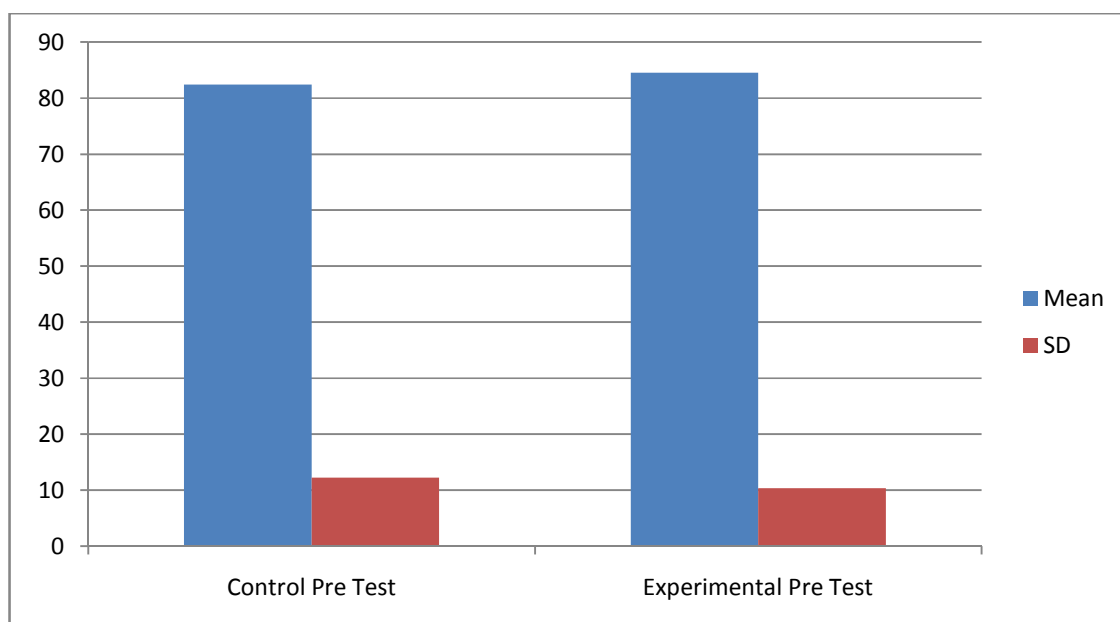


Figure No – 1 Graphical Representation regarding Mean and S.D Score of Control and Experimental Pre Test related to Resting Pulse Rate Variable.

Hence, there was not so much difference noticed in the Pre-Test score of subjects of both the groups regarding Resting Pulse Rate between Control Group and Experimental

Group. Therefore, to test the equality of means between both the groups i.e Control and Experimental on Resting Pulse Rate, levene’s test for equality of variances (Independent Sample t-Test) has been employed which have been reflected in the below table i.e Table No 2

Table No -2

Independent Sample t-Test about Resting Pulse Rate of Control Pre Test v/s Experimental Pre-Test

		Levene’s Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	Df	Sig.(2-tailed)	Mean Difference	Std.Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
RPR	Equal Variance assumed	.233	.631	-.781	68	.437	-2.11429	2.70562	-7.51327	3.28470
	Equal Variance not assumed			-.781	66.127	.437	-2.11429	2.70562	-7.51604	3.28747

Table No- 2 reveals about the summary of independent sample t test with Levene’s test for equality of variance between Control and Experimental Groups at their Pre-Test. The F – Value of Levene’s test was .233, which was not significant at 0.05[P=.631, p>0.05]. Therefore, the assumption of equal variance assumed was met.

The calculated value of Independent t was -.781 (p=.437, p>0.05) which was not significant at 0.05 level of alpha. Hence, both the groups are significantly equal at the time of Pre-Test.

Table No - 3

Descriptive statistics about Resting Pulse Rate of Experimental Pre Test v/s Experimental Post Test

Variable	Group	Phase	N	Mean	SD	SEM
RPR	Experimental	Pre-Test	35	84.57	10.32	1.74
	Experimental	Post-Test	35	77.11	8.43	1.42

The above table states that there were 35 subjects in each Test of Experimental Group i.e Pre and Post have been tested on Resting Pulse Rate. The mean score of Experimental Group Pre-Test and Experimental Group Post-Test regarding Resting Pulse Rate was 84.57 and 77.11 respectively. Further the standard deviation score of Experimental Group Pre-Test and Experimental Group Post-Test was recorded as 10.32 and 8.43 respectively, which is also reflected in the graphical representation as Figure No- 2

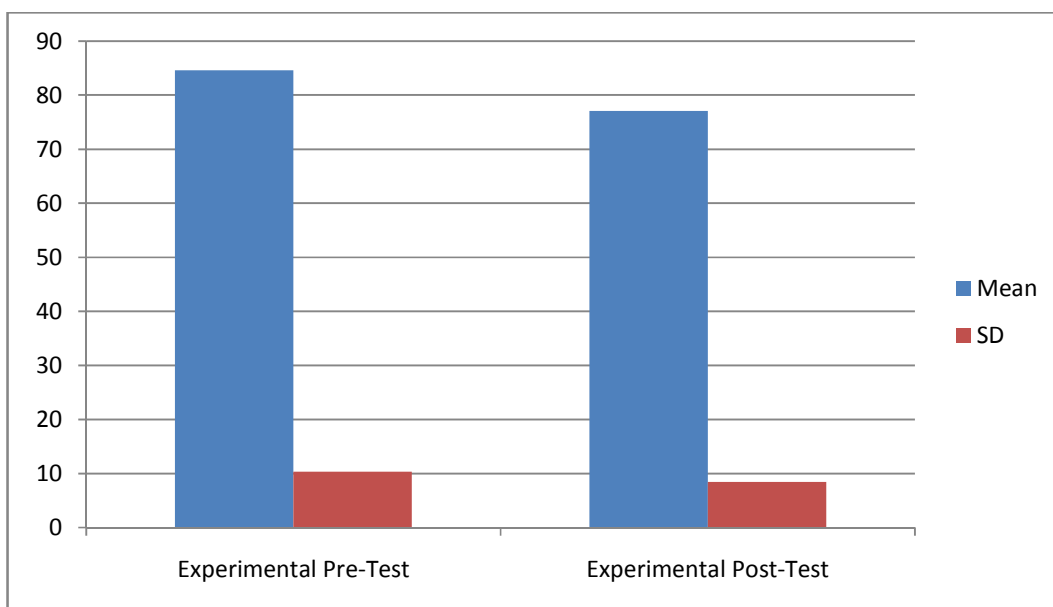


Figure No – 2 Graphical Representation regarding Mean and S.D Score of Experimental Pre-Test and Experimental Post-Test related to Resting Pulse Rate Variable.

Hence, the difference was noticed between Mean and SD score of Experimental Pre Test and Mean and SD score of Experimental Post Test Regarding the Resting Pulse Rate Variable of the subjects. Therefore to test the difference significantly, Paired sample t-Test has been employed which is reflected in Table No – 4

Table No – 4

Paired Sample t-Test regarding Resting Pulse Rate of Experimental Pre Test v/s Experimental Post Test

Name of the Pair	Mean Difference	Std.Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig.(2-tailed)
				Lower	Upper			
RPR_EX_PRE-RPR_EX_POST	7.45	7.06	1.19	5.03	9.88	6.24	34	.000

Table No- 4 shows about the summary of paired sample t statistics between the mean score of Experimental Group Pre-Test and Post-Test. It was taking into notice that difference between Pre and Post Mean Score was 7.45 . The calculated value of dependent t was 6.24 with df34 which was statistically significant at 0.05 level of alpha($p < 0.05$). Therefore, it was observed that six months Bhramari Pranayama Training made significant variation on Resting Pulse Rate of the subjects of Experimental Group.

Table No – 5

Descriptive statistics about Resting Pulse Rate of Control Post Test v/s Experimental Post Test.

Variable	Group	Phase	N	Mean	SD	SEM
RPR	Control	Post-Test	35	87.71	12.90	2.18
	Experimental	Post-Test	35	77.11	8.43	1.42

The above table reveals that there were 35 subjects in each group i.e Control and Experimental have been tested (Post-Test) after six months on Resting Pulse Rate. The Mean Score of Control Group and Experimental Group regarding Resting Pulse Rate was 87.71 and 77.11 respectively. Further the standard deviation score of Control Group and Experimental Group was recorded as 12.90 and 8.43 respectively, which is also reflected in the graphical representation as Figure No 3.

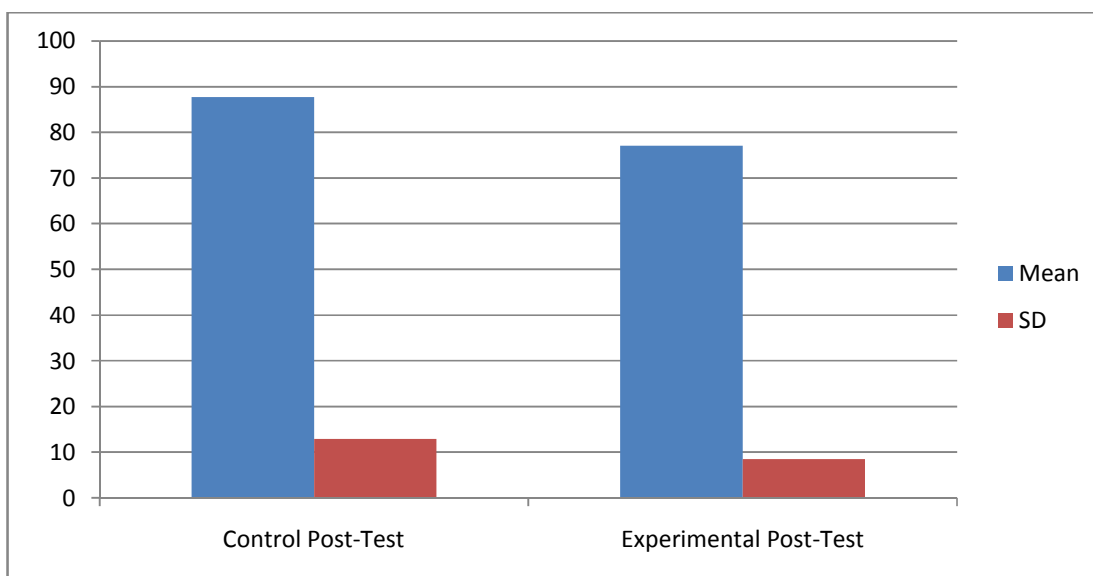


Figure No – 3 Graphical Representation regarding Mean and S.D Score of Control and Experimental Post-Tests related to Resting Pulse Rate Variable.

Hence, so much difference was noticed in the Post-Test score of subjects of both the groups i.e Control and Experimental, regarding Resting Pulse Rate Variable. Therefore, to test the significant difference of means between both the groups i.e Control and

Experimental on Resting Pulse Rate, Independent Sample t-Test has been employed which have been reflected in the below table i.e Table No 6

Table No – 6

Independent Sample t-Test about Resting Pulse Rate of Control Post Test v/s Experimental Post-Test.

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	Df	Sig.(2-tailed)	Mean Difference	Std.Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
RP R	Equal Variance assumed	3.602	.062	4.068	68	.000	10.60000	2.60586	5.40009	15.79991
	Equal Variance not assumed			4.068	58.554	.000	10.60000	2.60586	5.38486	15.81514

Table No- 6 reflects about the summary of Independent Sample t Test with Levene's test for equality of variance between Control and Experimental Groups at their Post-Test. The F – Value of Levene's test was 3.602, which was not significant at 0.05[P=.062, p>0.05]. Therefore, the assumption of equal variance assumed was met.

The calculated value of Independent t was 4.068 (p=.000, p<0.05) which was significant at 0.05 level of alpha. Hence, both the groups are significantly unequal at the time of Post-Test. It means that the difference was noticed between the Mean Score of both the Groups at the time of Post-Test related to Resting Pulse Rate due to six months of Bhramari Pranayama Training given to Experimental Group only.

DISCUSSION OF FINDINGS

The above results helps us to interpret that Regular Practice of Pranayam activate various functions of our body. It exercise the respiratory system. It also helps to trained the respiratory muscles and might have improve the functional ability of intercostals muscles. Thus, in turn it helped to improve the Resting Pulse Rate of the Subjects of Experimental Group. Hence, six months training of Bhramari Pranayama have shown significant effect on improving Resting Pulse Rate.

Overall, the present study proved that if the middle standard students actively involved in the regular practice of Bhramari Pranayama then they can improve their health specially

related to Resting Pulse Rate. The result indicates that there is a significant effect of six months Training of Bhramari Pranayama on Resting Pulse Rate of middle standard students as Independent t- value is found. 4.068 ($P=.000$, $P<0.05$) which was significant at 0.05 level of alpha.

CONCLUSION

Improvement in Resting Pulse Rate has been achieved among the middle standard students due to the regular practice of Bhramari Pranayama. Middle standard students can improve their health specially related to Resting Pulse Rate Variable by adopting a systematic Practice of Bhramari Pranayama as an important aspect of their life.

Observation and result make it evident that Yogic Training like Bhramari Pranayama can be used along with their routine work to normalize their Resting Pulse Rate, so that they can live their normal & productive life. Within the limits and the limitations of the study it was concluded that regular practice of Bhramari Pranayama have substantially and significantly improved the Resting Pulse Rate of middle standard students. Therefore on the basis of Result, we cannot denied the benefits of yoga is very much high in reference to regarding one's health.

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