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EFFECTS OF YOGIC PRANAYAMA ON HEART RATE AND BLOOD PRESSURE ON SEDENTARY STUDENTS

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ABSTRACT

The objective of the study was to determine the Effects of yogic pranayama on heart rate and blood pressure on sedentary students. In all, thirty sedentary Students group was targeted experimental group whose age ranged between 15-25 years. This study involves the effects of Yogic Pranayama heart rate and blood pressure in quasi experimental research design. The data was collected through respondents in the form of different experimental tests. The demographic information about Age, height, weight etc. was obtained before seeking responses. Resting heart rate and blood pressure of each subject was recorded before & after training. The blood pressure is the pressure of the blood within the arteries. Training program would be planned as 12 weeks 4 days a week and 60 min. The yogic Pranayama includes Kapalbhathi ,Anulom Vilom ,Bhastrika etc. before starting Yogic Pranayama the demonstration was given to the students. The result of the study shows that there was a significant effect of pranayama on heart rate in sedentary students. The result also indicates that there was a significant effect of pranayama on Systolic Blood Pressure in sedentary students. However, there was in significant effects of pranayama on Diastolic Blood Pressure in sedentary students

Keywords: Pranayam, sedentary, Blood pressure, Kapalbharti

INTRODUCTION

Pranayama is one of the central teachings in classical yoga (Hari Dass, 1999; Muktibodhananda, 2006). Pranayama means control and regulation of breath. Prana” is a Sanskrit word, which means “Vital Force”. It also signifies “life” of breath. “Ayana, Means the control of the pran so pranayama means the control of the vital force (Prana) by concentration and regulated breathing. Prana is the vital power or force, which is motivating every element on the earth and is the airgun of the force of thought. The objective of pranayama is to inspire, Motivate, regulate and balance the vital force prevailing in the body. It cleanses the body and knowledge is manifested pranayama is called the soul of Yoga. Bathing is necessary for purifying the body similarly, pranayama is essential for purifying the mind. The prevalent aim of pranayama in sports is to strengthen the nervous system. It also increases the concentration power of mind.

It is gratifying that science has started studying the effects of yogic techniques, while yoga has started using modern technology and scientific methods. Scientific research has shown that yogic techniques produce consistent and beneficial physiological changes. A few weeks of disciplined yoga practice can lead to improvement in many physiological and psychological functions. Practice of pranayama results in an overall improvement in cardio-respiratory functions and physical fitness which improves one’s tolerance to stressors

Yogic practices alter the hypothalamic discharges leading to decrease in sympathetic tone and peripheral resistance and hence the diastolic blood pressure. Regular yogic practices strengthen the respiratory muscles; increase the excursions of diaphragm and lungs as well as thoracic compliance.

TARGET POPULATION

Total thirty, sedentary Students group was targeted experimental group whose age ranged between 15-25 yrs.

RESEARCH DESIGN:

The design in a research study refers to “the researcher’s overall plan for answering the researcher’s question or testing the research hypotheses”. This study involves the effects of Yogic Pranayama heart rate and blood pressure in quasi experimental research design.

DEMOGRAPHIC INFORMATION

The data was collected through respondents in the form of different experimental tests. The demographic information about Age, height, weight etc. was obtained before seeking responses.

RESTING HEART RATE

Resting heart rate of each subject was recorded before & after training. Before recording Resting heart rate the subject was instructed to remain lying on their bed to record the heart rate, Heart rate was recorded by the palpation at radial artery per minute. The score was express in number of heart rate per minute.

BLOOD PRESSURE

The blood pressure is the pressure of the blood within the arteries. It is produced primarily by the contraction of the heart muscle. Blood pressure Device was used to measure Blood pressure

TRAINING PROGRAMME

Training program would be planned as 12 weeks 4 days a week and 60min. The yogic Pranayama includes Kapalbhathi ,Anulom Vilom ,Bhastrika and nadi shodhan before starting above Yogic Pranayama the demonstration was given to the students.

COLLECTION OF DATA

Data was taken from the 30 students as an experimental group of similarly Pre and Post Test was taken from 30 other students as a control group. Yogic Pranayama was given to the experimental group only.

STATISTICAL ANALYSIS

The obtained data was in Pre & Post form therefore to analysis the obtained data Mean, Standard Deviation and t ratio was utilized by the investigator. The level of significant was set up at 0.05 level.

RESULTS OF THE STUDY

The results concerning this are presented in the form of tables and also illustrated with the help of suitable figures where ever necessary. For the sake of convenience and methodical presentation of the results, following order has been adopted.

Table-1: Shows Mean Scores and Standard Deviations of Morphological characteristics of the Experimental groups

Sr. No.	Components	Means Scores	Standard Deviation
1.	Age (Year)	21.66	4.67
2.	Weight (Kg)	66.10	9.08
3.	Height (cm)	170.67	16.02

Mean Score (S.Ds.) age of experimental group was 21.66 (4.67) years, mean score (S.Ds.) height was 66.10 (9.08) kg., mean score (S.Ds.) and height was 170.67 (16.02) cm,

Table-2: Mean score standard deviation and t-ratio of Heart rate in pre and post-test of Experimental group.

Efficiency	Test	Number	Mean	S.D.	
Heart Rate	Pre Test	30	75.40	5.76	Significant at 0.05 level
	Post Test	30	72.13	4.67	

Significant at 0.05 level

Table -2 Shows that mean scores and standard deviation of heart rate of pre and post-test of Experimental group. With regards to pre and post-test of Experimental group they have obtain the mean value of **75.40** and **72.13** respectively. The result of the study shows that there was significant effects of pranayama on heart rate in sedentary students.

Table-3: Mean score standard deviation and t-ratio of systolic blood pressure in (pre and post-test) Experimental group.

Efficiency	Test	Number	Mean	S.D.	T-ratio
Systolic Blood Pressure	Pre Test	30	126.89	9.78	Significant at 0.05 level
	Post Test	30	121.34	9.05	

Table -3 Shows that mean scores and standard deviation of selected physiological efficiency with respect to heart rate of pre and post-test of Experimental group. With regards to selected physiological efficiency in heart rate of pre and post-test of Experimental group they have obtain the mean value of 126.89 and 121.34 respectively. The result of the study shows that there was significant effects of pranayama on Systolic Blood Pressure in sedentary students

Table-4: Mean score standard deviation and t-ratio of Diastolic blood pressure in (pre and post-test) Experimental group

Efficiency	Test	Number	Mean	S.D.	T-ratio
Diastolic Blood Pressure	Pre Test	30	85.78	9.78	Not Significant
	Post Test	30	84.89	9.05	

Table -4 Shows that mean scores and standard deviation of pre and post-test of **Diastolic** Blood Pressure in Experimental group. With regards to selected physiological efficiency in heart rate of pre and post-test of Experimental group they have obtain the mean value of 85.78 and 84.89 respectively. The result of the study shows that there was in significant effects of pranayama on **Diastolic** Blood Pressure in sedentary students

DISCUSSION OF FINDINGS

The present study deals with the effects of Yogic Pranayama on heart rate and Blood pressure in sedentary students. Several studies also examined resting cardiovascular variables, such as heart rate and blood pressure prior. Cowen and Adams (2005) found significant decreases in resting diastolic blood pressure over a six-week training period. Telles, Nagarathna, Nagendra, and Desiraju (1993) also found decreases in diastolic blood pressure as well as systolic blood pressure and decreased resting heart rate in 40 male physical education teachers (aged 25-48 year), whom attended a three month residential yoga training camp and engaged in 90 minutes of yoga daily. Konar, Latha, and Bhuvaneshwaran (2000) observed a significant decrease in resting heart rate in 8 healthy males (aged 17 – 18 years) following the practice of one yoga posture for approximately 8 minutes daily for a period of two weeks. The participants engaged in shoulderstand, a posture in which the body is inverted with the legs perpendicular to the floor, hands resting on the lower-back and the upper-arms and shoulders are pressing into the floor. Shoulderstand is a highly regarded yoga posture in which health benefits to the cardiovascular system are received due to the inverting of the body, thereby reducing the work performed by the heart.

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