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Effect Of Pranayama On Selected Physiological Variables Of Male Physical Education Students

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Abs tract:-*The objective of the study was to determine the effects of Pranayama on Selected Physiological Variables of Male Physical Education Students of P.G.College, Upardaha, Baraut, Allahabad (U.P), India. The subjects for this study were randomly selected from the Department of Physical Education at P.G.College, Upardaha, Baraut, Allahabad (U.P), India. A total of 40 male physical education students were selected as subject for this study. All the subjects were randomly divided into 2 groups. Pranayama was considered as the Independent Variable and Vital Capacity, Resting Blood Pressure (Systolic and Diastolic) and Resting Heart Rate were considered as the Dependent Variable. The statistical technique employed for this study was mean, standard deviation and Ancova test. The level of significance was tested at 0.05 level. A significant (p<.05) effect of Pranayama was found in relation to Blood Pressure and Vital Capacity. In case of Pulse Rate no significant difference was found at (p<.05) level after six week training. The independent variables were assessed before and after the training period.*

Keyw ords:Suryanamaskar, Blood Pressure, Pulse Rate, BMI

INTRODUCTION

Pranayama is a Sanskrit word meaning "extension of the prana or breath" or, "extension of the life force". The word is composed of two Sanskrit words, “Prana” means life force or vital energy particularly the breath and "ayama" means to extend or draw out. The origins of this yogic discipline lies in ancient Bharat (India) and what is known as present day Hinduism.

The science of pranayama was developed by highly evolved yogic experts through an intuitive and experiential understanding of prana and its influence on the human physiological mechanism at various levels. The agency of the breath was used to access the pranic field, to attain balance in the body and control of the mind. The practices would render the body-mind instrument capable of experiencing higher states of consciousness so that the ultimate union with the transcendental reality could be experienced.

The breath being the medium of pranayama, the system is based on the three stages of respiration: inhalation (pooraka), retention (kumbhaka) and exhalation (rechaka). By permuting and directing these three stages, the different practices of pranayama are obtained.

Pranayama (According to the Gita)

Apane juhvati pranam pranepanam tathapare; Pranapanagatee ruddhva pranayamaparayanah (Gita, Ch. IV-29.). Others offer Prana (outgoing breath) in Apana (incoming breath) and Apana in Prana, restraining the passage of Prana and Apana, absorbed in Pranayama. Pranayama is a precious Yajna (sacrifice). Some practise the kind of Pranayama called Puraka (filling in). Some practise the kind of Pranayama called Rechaka (emptying). Some are engaged in the practice of Pranayama called Kumbhaka, by impeding the outward passage of air, through the nostrils and the mouth, and by impeding the inward passage of the air, in the opposite direction.

When a person becomes apt in controlling, shaping and molding the “prana”, he/she gets the inner strength of conscience which results in optimum and enhanced status of all physiological functions and their relative outputs.

Therefore, observing the felt requirement, we consider it necessary to attempt effects of Pranayama on selected physiological variable of physical education students.

OBJECTIVE OF THE STUDY:

The objective of this study was to determine the effect of Pranayama on Selected Physiological Variables of Male Physical Education Students of P.G.College, Upardaha, Baraut, Allahabad (U.P), India.

SELECTION OF VARIABLES:

The following variables were selected: Dependent variables: Vital Capacity, Resting Heart Rate, Resting Blood Pressure (Systolic & Diastolic Blood Pressure) Independent variables: Pranayama (Kapala Bhati & Anuloma-Viloma Pranayama)

METHODOLOGY

SELECTION OF THE SUBJECTS:

The researcher randomly selected 40 male B.P.Ed. Students from P.G.College, Upardaha, Baraut, Allahabad. The subjects were divided into two groups. Experimental Group consisting of 20 subjects under gone the Pranayama training and then Experimental group II consisting of 20 subjects acted as a control group.

STATISTICAL TECHNIQUES:

The researcher used ANCOVA statistical technique for the analysis of this study. Data analysis was performed using SPSS 17.0 software under windows.

COLLECTION OF DATA:

The variable to be used in the present study was collected from all subjects before the treatment. It was assumed as pre-test. After completion of the treatment they were tested, as it is in the pre-test on all variables used in the present study. This test was assumed as post-test.

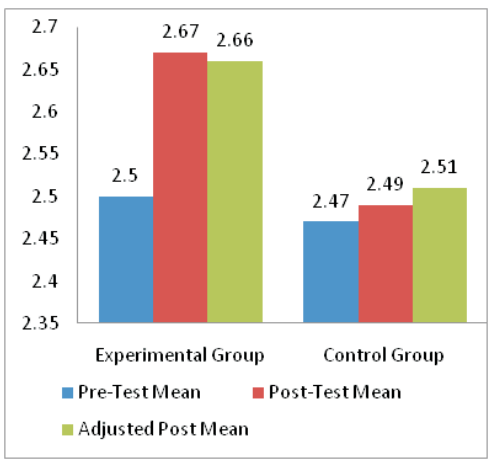
FINDINGS

The findings of the study are given in the following tables:

Table-1
ANALYSIS OF COVARIANCE ON VITAL CAPACITY

Mean	Experimental Group	Control Group	S.V	Sum of Squares	df	Mean Square	'F' Value
Pre-Test means	2.50	2.47	Between Groups	.010	1	.010	.127
			Within Groups	3.05	38	.080	
Post-Test means	2.67	2.49	Between Groups	.319	1	.319	4.027*
			Within Groups	3.007	38	.079	
Adjusted Post Means	2.66	2.51	Between Groups	.22	1	.22	22.38*
			Within Groups	.36	37	.010	

*Significant at 0.05 level



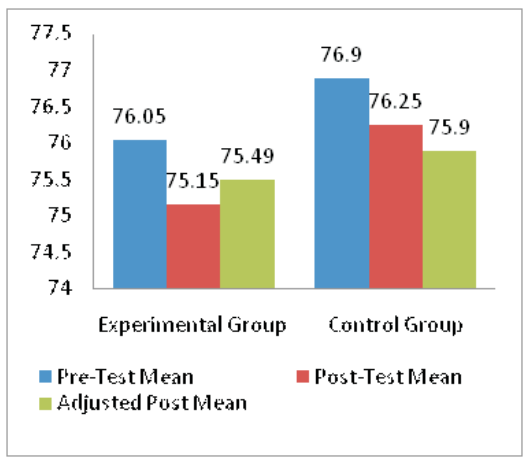
RESULTS ON VITAL CAPACITY

Table reveals insignificant F-ratio in pre-test between control and experimental group. Hence, initial randomization was successful. Further table reveals significant difference in post test among groups in relative Vital Capacity as obtained F-value is greater than tabulated value at 0.05 level.

Table-2
ANALYSIS OF COVARIANCE ON RESTING PULSE RATE

Mean	Experimental Group	Control Group	S.V	Sum of Squares	df	Mean Square	'F' Value
Pre-Test means	76.05	76.90	Between Groups	7.22	1	7.22	.801
			Within Groups	342.75	38	9.02	
Post-Test means	75.15	76.25	Between Groups	12.10	1	12.10	1.335
			Within Groups	344.30	38	9.06	
Adjusted Post Means	75.49	75.90	Between Groups	1.644	1	1.64	.514
			Within Groups	118.25	37	3.19	

*Significant at 0.05 level



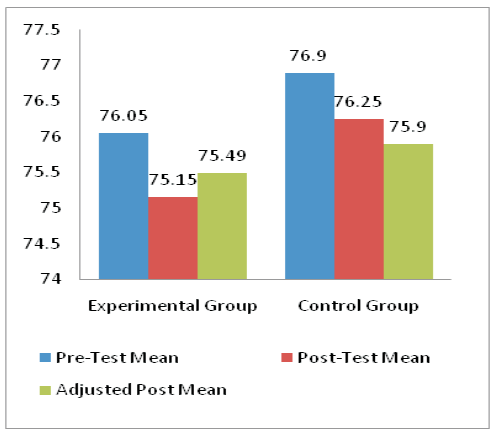
RESULTS ON RESTING PULSE RATE

Table- 2 reveal insignificant F-ratio in pre-test & post-test between experimental and control group.

Table-3
ANALYSIS OF COVARIANCE OF SYSTOLIC BLOOD PRESSURE

Mean	Experimental Group	Control Group	S.V	Sum of Squares	df	Mean Square	'F' Value
Pre-Test means	118.35	117.10	Between Groups	15.62	1	15.62	.860
			Within Groups	690.35	38	18.16	
Post-Test means	115.40	116.80	Between Groups	19.60	1	19.60	1.400
			Within Groups	532.00	38	14.00	
Adjusted Post Means	114.90	117.30	Between Groups	57.12	1	57.12	28.127*
			Within Groups	75.13	37	2.03	

*Significant at 0.05 level



RESULTS ON SYSTOLIC BLOOD PRESSURE

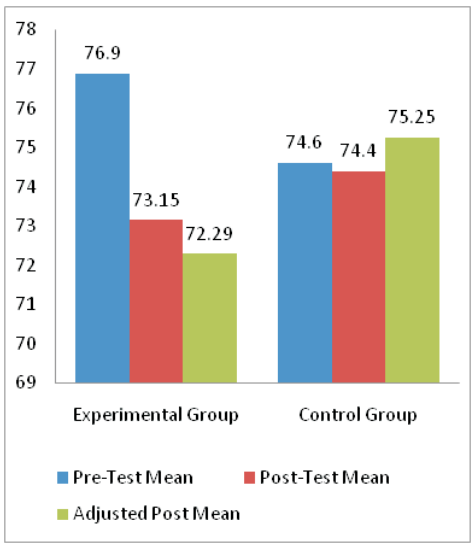
Table- 3 reveal insignificant F-ratio in pre-test & post-test between experimental and control group.

On the other hand F-ratio was found significant in adjusted post means between experimental and control groups. Hence there was significant difference in systolic blood pressure between the groups.

Table-4
ANALYSIS OF COVARIANCE ON DIASTOLIC BLOOD PRESSURE

Mean	Experimental Group	Control Group	S.V	Sum of Squares	df	Mean Square	'F' Value
Pre-Test means	76.90	74.60	Between Groups	52.90	1	52.90	3.178
			Within Groups	632.60	38	16.64	
Post-Test means	73.15	74.40	Between Groups	15.62	1	15.62	1.310
			Within Groups	453.35	38	11.93	
Adjusted Post Means	72.29	75.25	Between Groups	80.89	1	80.89	28.941*
			Within Groups	103.41	37	2.79	

*Significant at 0.05 level



RESULTS ON DIASTOLIC BLOOD PRESSURE

Table- 4 reveal insignificant F-ratio in pre-test & post-test between experimental and control group.

On the other hand F-ratio was found significant in adjusted post means between experimental and control groups. Hence there was significant difference in systolic blood pressure between the groups.

DISCUSSION:

Present study showed significant changes in various physiological parameters of experimental group in post test. Pranayama accompanied by breath control increase cardiac output, decrease the hepatic level blood flow in the peripheral vessels. Regular practice of Pranayama also results with a decrease in the heart rate and diastolic blood pressure.

Various respiratory parameters would have improved after completion of pranayam session as a result it improves in breathes holding time.

Pulse rate alternations in various types of programme are described in other similar studies. In this study pulse rate change was observed but it was statistically insufficient to be significant.

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