

Effects of Meditation and Pranayama on Heart Rate of Women Students

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Abstract

The subjects selected for the present study were divided into three equal groups called, Experimental group I (Meditation Group), experimental II (Pranayama group) and Control group, consisting of 15 Female students in each group. They were the students of graduate Course and their age ranged from 18 to 25 years during the academic year 2016-17. The entire samples were directed to assemble in a multipurpose hall Padmpani College of Physical education to seek their willingness, to act as subjects. The investigator explained to them the purpose, nature, importance of the experiment and the procedure to be employed to collect their information. Further the role of the subjects during the experimentation and the testing procedure were also explained to them in detail. 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, pulse rate was recorded by the palpation at radial artery per minute. The score was express in number of pulse rate per minute. The result of the study reveals that there were significant difference were found in post test Heart rate among Meditation , Pranayama and Control group.

Introduction

Meditation means to attain mental purification and balance. The aim of the Meditation is to eliminate toxin and impurities within the body that accumulate due to dietary habit. Meditation provides mental relation for Athletes in the playing field is very much necessary to produce the desired results. Especially physical and mental relaxation at the time of critical junctures during the actual competition can be a boon to the Athletes.. In other words by controlling tension based on the rules governing the working of the muscles in the body which are under the control of mind. Physical and mental tension leads to the loss in self-confidence, bad temper, foul play and committing mistakes, which in the normal relaxed state they would not have done. Pranayama is a basic yogic breathing technique in Yoga, yogic breathing system known as Pranayama has great importance for making better performance it can be perform under the guidance of an expert through proper environment conditions. In brief we can say that it is a complete process of sportsmen can use of the great benefits of the full deep breathing on many other stages. Deep full breathing has provided beyond doubt to be extremely good for any human being for improving their cardiovascular system, thereby developing endurance and stamina and also for attaining physical and mental relaxation.

Objectives

The objectives of the study is to effect of the Meditation and Pranayama on Heart Rate among women Students .

Hypothesis

There would be significant differences of the effect of the Meditation and Pranayama on to Heart Rate among women Students.

Methods

Three groups were targeted viz.Meditation group, Pranayama Group and control . Forty five college girls selected for the study. Training was given to Meditation group, Pranayama Group separately; the data was collected through respondents in the form of different descriptive tests. The demographic information about, age, height, weight etc. was obtained before seeking training. Purposive sampling method was used, as the researcher selected young girls with a specific purpose. The subjects selected for the present study were divided into three equal groups called, Experimental group I (Meditation Group), experimental II (Pranayama

group) and Control group, consisting of 15 Female students in each group. They were the students of graduate Course and their age ranged from 18 to 25 years during the academic year 2016-17. The entire sample were directed to assemble in a multipurpose hall Padmpani College of Physical education to seek their willingness, to act as subjects. The Ph.Dscholar explained to them the purpose, nature, importance of the experiment and the procedure to be employed to collect their information . Further the role of the subjects during the experimentation and the testing procedure were also explained to them in detail. The physical conditions of the subjects were assessed by the demographic information form . They were requested to co-operate and participate actively for the same. 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, pulse rate was recorded by the palpation at radial artery per minute. The score was express in number of pulse rate per minute. The yogic Pranayama includes Kapalbhati ,AnulomVilom and Bhastrika .Yogic Pranayama the demonstration was given to the subjects . Pranayama and meditation programme was planned for 12 weeks, 5 days a week and 60 minutes a day. Meditation programme was prepared by the investigator on consultation with experts. It consists of meaning, types, uses and techniques of meditation including **Basic** (Agha, Moolathara and Thuria) and **Nine Centres Meditation** (Moolathara, Swathitana, Maniporaga, Anagatha, Vishukthi, Agha ,Thuria, Thurithedha and Thuvathasangam). They were explained through video presentation which was of 20 minutes in duration in local language . Then it was enacted by the subjects under the supervision of the investigator. The result computed also crosschecked by using following statistical variables. Mean, standard deviation, ANOVA and LSD post hoc test.

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 F-ratio, LSD means and standard deviation used for find out the results, following order has been adopted.

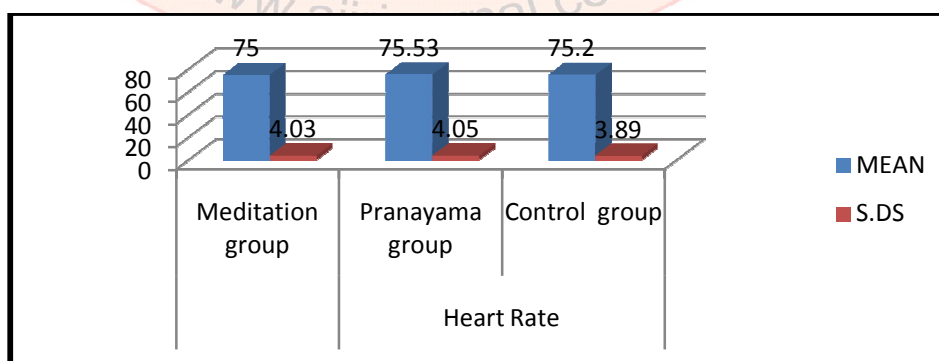
Table 1
Pre-Test Mean Scores And Standard Deviation Of Heart Rate
Among meditation Group Pranayama Group And Control Group

COMPONENTS	GROUP	SAMPLE SIZE	MEAN	S.DS
Heart Rate	Meditation group	15	75.00	4.03
	Pranayama group	15	75.53	4.05
	Control group	15	75.20	3.89

Table 1 shows that the pre-test mean scores, standard deviation of Meditation, Pranayama and Control group with respect to heart rate. The Pre-Test mean scores, standard deviation of Meditation, Pranayama and Control group with respect to heart rate are presented graphically in figure-1

FIGURE – IV

SHOWS THAT THE PRE TEST MEAN SCORES, STANDARD DEVIATION OF MEDITATION GROUP, PRANAYAMA GROUP AND CONTROL GROUP WITH RESPECT TO HEART RATE.



In order to find out the significant difference of pre-test heart rate among Meditation, Pranayama and Control group one way analysis of variance was used to compare the Heart rate of pre-test.

The results of one way Analysis of variance of pre-test heart rate among three group of sample is presented in Table 2

TABLE – 2
ONE WAY ANALYSIS OF VARIANCE SHOWS THE COMPARISON OF PRE-TEST HEART RATE
AMONG MEDITATION, PRANAYAMA AND CONTROL GROUP

Components	Source of Variance	DF	SS	MSS	F-ratio
Heart rate	Between group	2	2.56	1.28	1.17NS
	Within group	42	45.78	1.09	

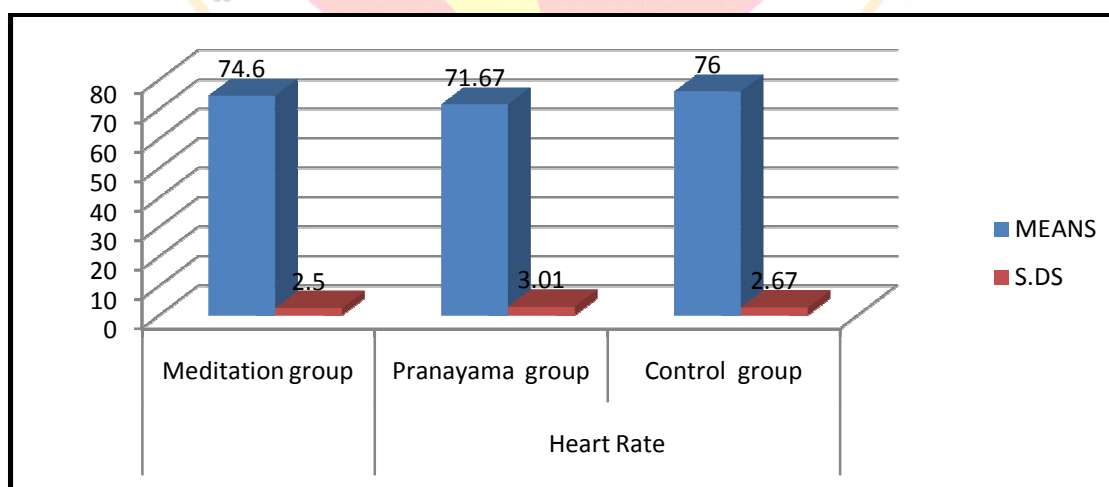
Table-2 shows the statistical comparison of pre-test heart rate among Meditation, Pranayama and Control group. The result of the study reveals that there were no significant difference were found in Heart rate (F= 1.17) among Meditation , Pranayama and Control group. The Post-test mean scores and standard deviation of heart rate among meditation group, pranayama group and control group has been presented in table 3

TABLE 3
POST-TEST MEAN SCORES AND STANDARD DEVIATION OF HEART RATE
AMONG MEDITATION GROUP PRANAYAMA GROUP AND CONTROL GROUP

COMPONENTS	GROUP	SAMPLE SIZE	MEANS	S.DS
Heart Rate	Meditation group	15	74.60	2.50
	Pranayama group	15	71.67	3.01
	Control group	15	76.00	2.67

Table 3 shows that the Post-Test mean scores, standard deviation of Meditation, Pranayama and Control group with respect to heart rate. Post-Test mean scores and standard deviation of Meditation, Pranayama and Control group with respect to heart rate are presented graphically in figure-2

FIGURE – 2
SHOWS THAT THE PRE TEST MEAN SCORES AND STANDARD DEVIATION OF MEDITATION,
PRANAYAMA AND CONTROL GROUP WITH RESPECT TO HEART RATE.



In order to find out the significant difference of post-test heart rate among Meditation, Pranayama and Control group, the one way analysis of variance was used to compare the Heart rate of post-test.

The results of one way Analysis of variance of post-test heart rate among three group of sample is presented in Table 4

TABLE – 4
ONE WAY ANALYSIS OF VARIANCE SHOWS THE COMPARISON OF POST-TEST HEART RATE AMONG MEDITATION GROUP, PRANAYAMA GROUP AND CONTROL GROUP

Components	Source of Variance	DF	SS	MSS	F-ratio
Heart rate	Between group	2	5.36	2.68	3.04*
	Within group	42	37.07	0.88	

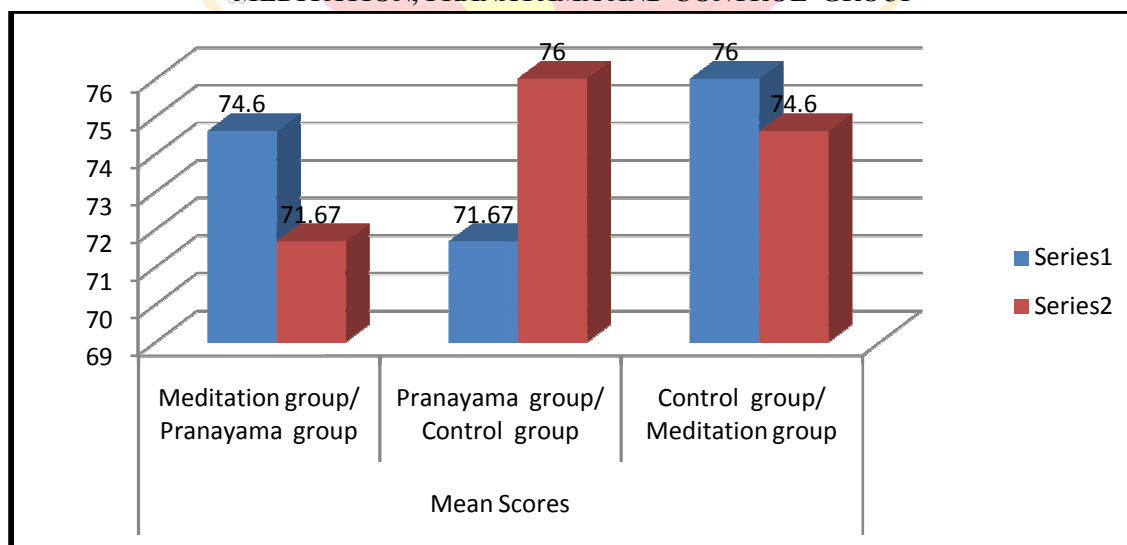
Table-7 shows the statistical comparison of post-test heart rate among Meditation, Pranayama and Control group. The result of the study reveals that there were significant difference were found in Heart rate (F= 3.04,P<.05) among Meditation , Pranayama and Control group .L.S.D. post hoc statistical comparison for post-test heart rate of Meditation , Pranayama and Control group has been presented in table- 5

TABLE – 5
L.S.D. POST HOC STATISTICAL COMPARISON FOR HEART RATE OF MEDITATION GROUP, PRANAYAMA GROUP AND CONTROL GROUP .

Meditation group	Mean Scores		Mean difference.	C.D. at 5% level
	Pranayama group	Control group		
74.60	71.67		2.93	1.28*
74.60		76.00	1.40	1.28*
	71.67	76.00	4.33	1.28*

Table 5 shows that the L.S.D. post hoc statistical comparison for heart rate of Meditation , Pranayama and Control group.

FIGURE-3
L.S.D. POST HOC STATISTICAL COMPARISON FOR HEART RATE OF MEDITATION, PRANAYAMA AND CONTROL GROUP



Discussion of findings

It had been hypothesised that, there would be significant differences of the effect of the Meditation and Pranayama on physiological variables with respect to Heart Rate among college women. With regards to pre-test mean score of heart rate of Meditation group was obtained 75.00, pre-test mean score of heart rate of Pranayama group was 75.53 and the pre-test mean score of heart rate of Control group was 75.20 respectively. However the standard deviation of pre-test heart rate of meditation group was obtained 4.03, pre-test heart rate of Pranayama group was obtained 4.05 and pre-test heart rate of control group was obtained 3.89 respectively. The result of the study reveals that there were no significant difference were found in Heart rate among Meditation, Pranayama and Control group. However, the **Post-Test** mean score of heart rate of Meditation group was obtained 74.60, mean score of heart rate of Pranayama group was 71.67 and the mean score of heart rate of Control group was 76.00 respectively. However the standard deviation of **Post-Test** heart rate of meditation group was obtained 2.50, **Post-Test** standard deviation of heart rate of Pranayama group was obtained 3.01 and post -test standard deviation of heart rate of control group was obtained 2.67 respectively. The result of the study reveals that there were significant difference were found in post test Heart rate among Meditation, Pranayama and Control group. The findings of the study revealed that, statistically significant difference of post-test heart rate was found between meditation group and pranayama group, the pranayama group was more significantly decrease the heart rate as compare than Meditation group. Pranayama group was more effective to decrease heart rate as compare to meditation group, whereas, significant difference of post-test heart rate was found between meditation group and control group, the meditation group was more significantly decrease the heart rate as compare to control group, meditation was more effective to decrease heart rate as compare to control. Furthermore, Statistically significant difference of post-test heart rate was found between pranayama group and control group, the pranayama group was more significantly decrease the heart rate as compare than control group. Therefore, Pranayama was more effective to decrease heart rate. Thus, the hypothesis regarding there would be significant differences of the effect of the Meditation and Pranayama on physiological variables with respect to Heart Rate among college women was accepted.

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