

# IMPACTS OF PRANAYAMA AND MEDIATION PROGRAM ON PEAK EXPIRATORY FLOW RATE OF FEMALE COLLEGIATE STUDENTS

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## **Abstract:**

### **Introduction**

Pranayama helps in expelling stale air from the lungs and increasing breathing efficiency. Pranayama is the art of lengthening and controlling the breath which helps to bring conscious awareness to breathing and reshape breathing habits and patterns.

### **Objective**

The objective of the study was Impacts of Yogic Practices Program on Peak expiratory flow rate of Female collegiate students .

### **Methods**

The 45 female students 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.

### **Training Program**

Pranayama and meditation programme was planned for 12 weeks, 5 days a week and 60 minutes a day. 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.

### **Results**

Statistically significant difference of post-test Peak expiratory flow rate was found between meditation group and pranayama group, the pranayama group was more significantly increase the Peak expiratory flow rate as compare than meditation group

### **Conclusions**

Pranayama was more effective to increase Peak expiratory flow rate as compare to their counterparts.

**Keywords:** Pranayama , Meditation, PEFR, Female,

## **I. INTRODUCTION**

Peak expiratory flow rate is the amount of air a person can force out in one quick breath. It is a reliable indicator of how well someone's lungs are ventilated and whether their airways are obstructed. Peak expiratory flow rate is measured in liters per minute and can vary from person to person depending on factors such as age, gender and height. The normal peak expiratory flow rate for adults is usually between 400 to 700 liters per minute, but the normal range for children is about 150 to 450 liters per minute . Pranayama and mediation can do wonders to boost a Female student's health . It helps in full control of bodily processes and increases endurance, determination and positivity. Pranayama and mediation help in enhancing the comprehensive health of female college students. Meditation focuses on the growth and transformation of the individual, along with improvement in life satisfaction of female college students.

The subjective wellbeing is achieved primarily through meditation. Pranayama strengthens the respiratory muscles due to which the chest and lungs expand and deflate to the fullest extent possible, and the muscles begin to work to their maximum extent. Meditation is a yogic process of calming the mind to its original state and providing deep relaxation to the system. Pranayama prolongs the inhalation and exhalation, providing further support to the respiratory muscles. Regular practice of yoga Improving posture by strengthening the spinal muscles and Increase range of motion in the chest and spine with regular stretches.

## II. METHODS

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.

### Sample size:

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.

### Group of students:

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.

### Site of the research

The entire sample were directed to assemble in a multipurpose hall Padmpani College of Physical education to seek their willingness, to act as subjects. 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.

### Pranayama and Yogic Practices

The yogic Pranayama includes Kapalbhathi, Anulom Vilom 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** (Aghna, Moolathara and Thuria) and **Nine Centres Meditation** (Moolathara, Swathitana, Maniporaga, Anagatha, Vishukthi, Aghna, 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 PEAK EXPIRATORY FLOW RATE AMONG  
MEDITATION GROUP PRANAYAMA GROUP AND CONTROL GROUP

COMPONENTS	GROUP	SAMPLE SIZE	MEAN	S.DS
Peak expiratory flow rate.	Meditation group	15	328.86	9.84
	Pranayama group	15	322.33	9.19
	Control group	15	323.13	10.09

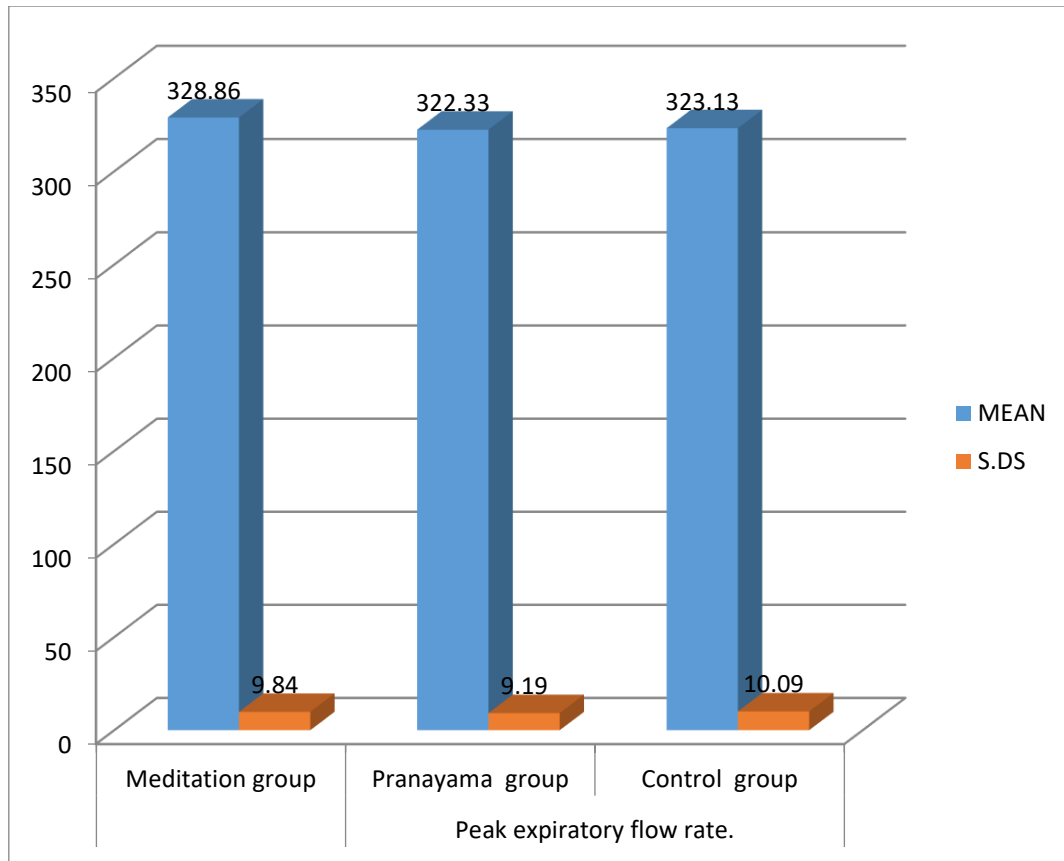
Table-1 shows that the Pre-Test mean scores, standard deviation of Meditation, Pranayama and Control with respect to Peak expiratory flow rate.

With regards to Pre-Test mean score of Peak expiratory flow rate of Meditation group was obtained 328.86, The Pre-Test mean score of Peak expiratory flow rate of Pranayama group was 322.33 and Pre-Test mean score of Peak expiratory

flow rate of Control group was 323.13 respectively. However the standard deviation of Pre-Test Peak expiratory flow rate of meditation group was 9.84, Pre-Test Peak expiratory flow rate of Pranayama group was obtained 9.19 and standard deviation of Pre-Test Peak expiratory flow rate of control group was obtained 10.09 respectively, Pre-Test mean scores, standard deviation of Meditation, Pranayama and Control group with respect to Peak expiratory flow rate are presented graphically in figure-1

FIGURE – 1

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



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

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

TABLE – 2

ONE WAY ANALYSIS OF VARIANCE SHOWS THE COMPARISON OF PRE-TEST PEAK EXPIRATORY FLOW RATE AMONG MEDITATION, PRANAYAMA AND CONTROL GROUP

Sr. No.	Components	Source of Variance	DF	SS	MSS	F-ratio
1.	Peak expiratory flow rate	Between group	2	3.04	1.52	1.24
		Within group	42	51.23	1.21	NS

Table-2 shows the statistical comparison of pre-test Peak expiratory flow rate among Meditation , Pranayama and Control group.

The result of the study reveals that there were no significant difference were found in pre-test Peak expiratory flow rate (F= 1.24) among Meditation, Pranayama and Control group .

Post-test mean scores and standard deviation of Peak expiratory flow rate among meditation group, pranayama group and control group has been presented in table 41

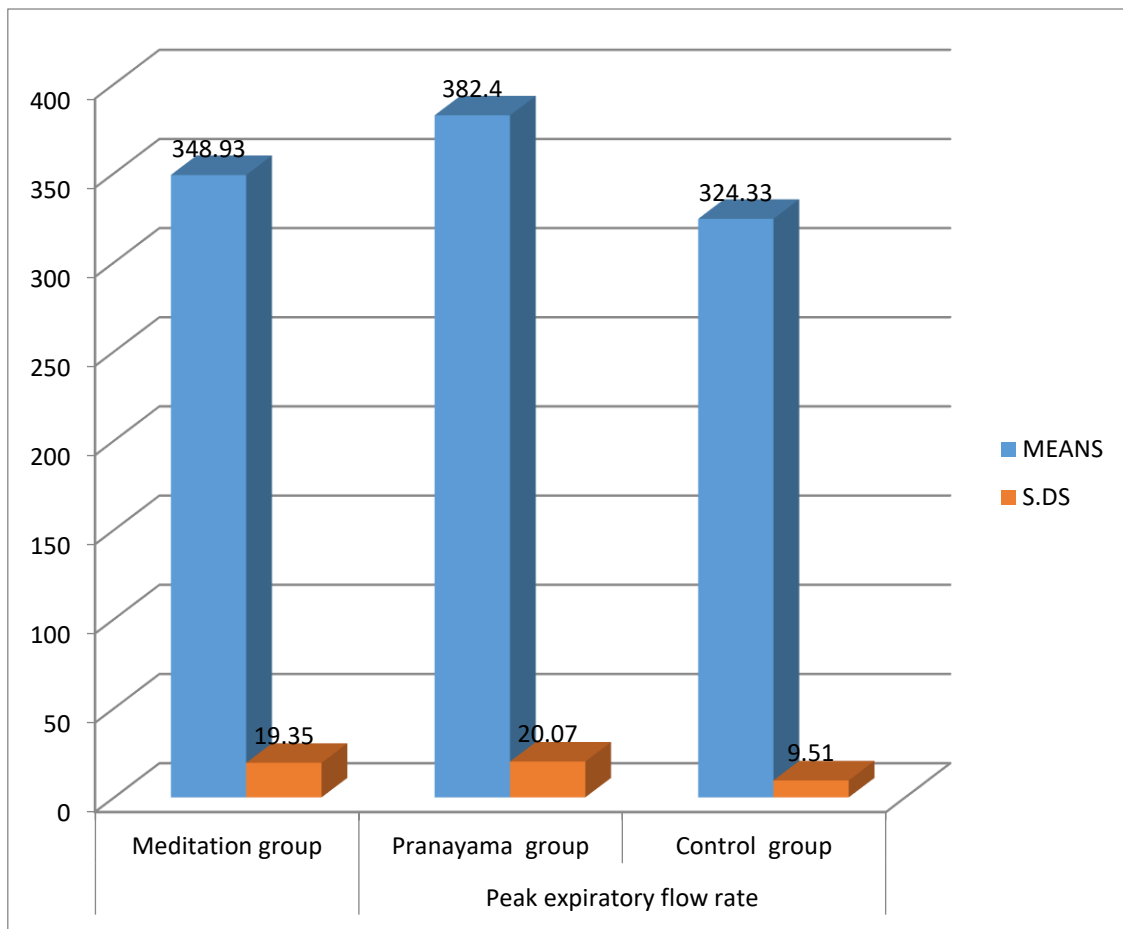
TABLE-3  
POST-TEST MEAN SCORES AND STANDARD DEVIATION OF PEAK EXPIRATORY FLOW RATE AMONG MEDITATION GROUP PRANAYAMA GROUP AND CONTROL GROUP

COMPONENTS	GROUP	SAMPLE SIZE	MEANS	S.DS
Peak expiratory flow rate	Meditation group	15	348.93	19.35
	Pranayama group	15	382.40	20.07
	Control group	15	324.33	9.51

Table 3 shows that the Post-Test mean scores, standard deviation of Meditation, Pranayama and Control with respect to Peak expiratory flow rate.

With regards to Post-Test mean score of Peak expiratory flow rate of Meditation group was obtained 348.93, The Post-Test mean score of Peak expiratory flow rate of Pranayama group was 382.4 and Post-Test mean score of Peak expiratory flow rate of Control group was 324.33 respectively. However the standard deviation of Post-Test Peak expiratory flow rate of meditation group was 19.35, Post-Test Peak expiratory flow rate of Pranayama group was obtained 20.07 and standard deviation of Post-Test Peak expiratory flow rate of control group was obtained 9.51 respectively, Post-Test mean scores, standard deviation of Meditation, Pranayama and Control group with respect to Peak expiratory flow rate are presented graphically in figure-3

FIGURE – 3  
SHOWS THAT THE PRE TEST MEAN SCORES, STANDARD DEVIATION OF MEDITATION, PRANAYAMA AND CONTROL GROUP WITH RESPECT TO PEAK EXPIRATORY FLOW RATE.



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

The results of one way Analysis of variance of post-test Peak expiratory flow rate among three group of sample is presented in Table 3

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

Sr. No.	Components	Source of Variance	DF	SS	MSS	F-ratio
1.	Peak expiratory flow rate	Between group	2	7.78	3.89	3.44*
		Within group	42	47.67	1.13	

Table-4 shows the statistical comparison of post -test Peak expiratory flow rate among Meditation, Pranayama and Control group.

The result of the study reveals that there were significant difference were found in post –test Peak expiratory flow rate (F= 0.52) among Meditation, Pranayama and Control group.

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

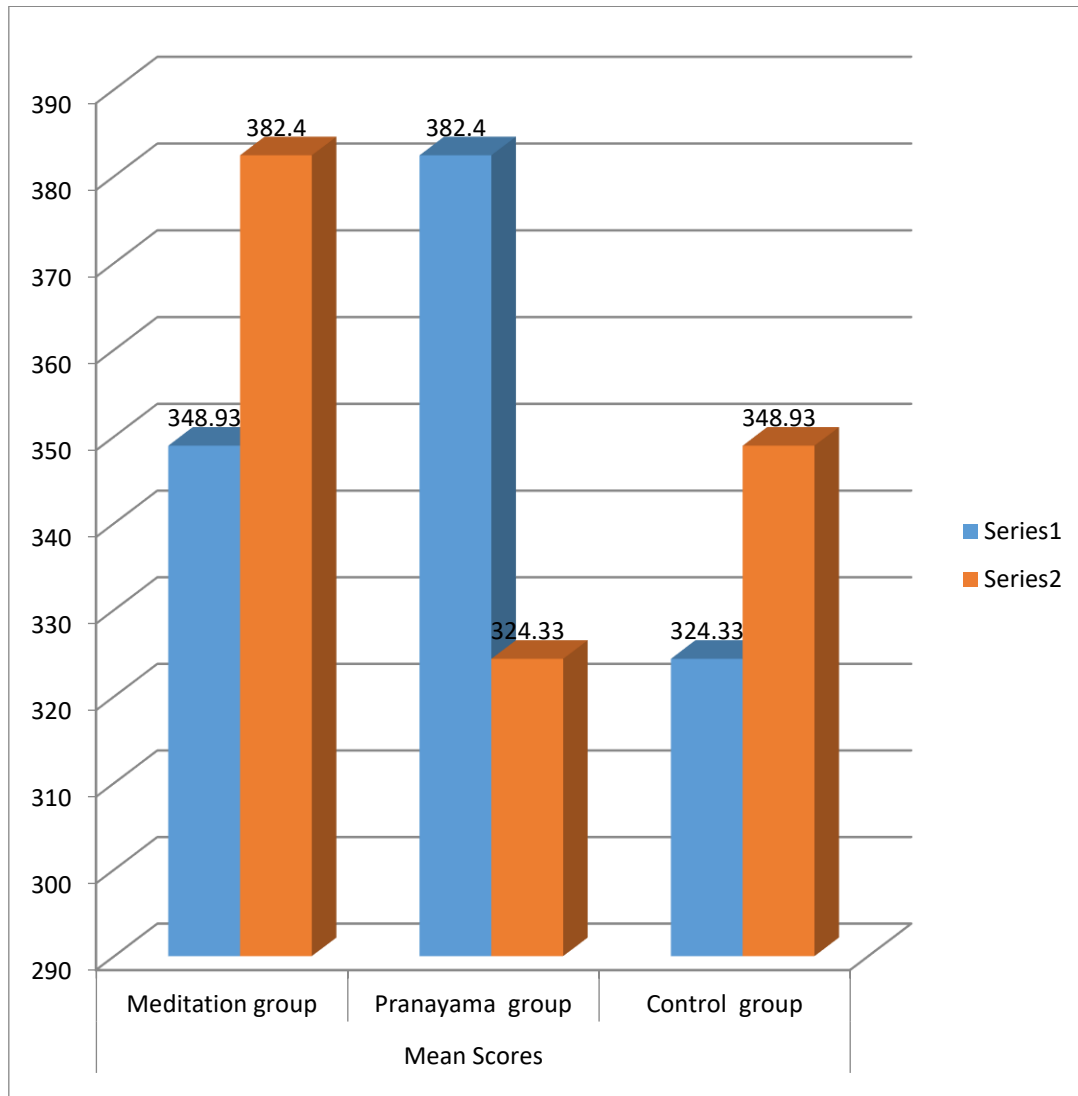
Mean Scores			Mean difference.	C.D. at 5% level
Meditation group	Pranayama group	Control group		
348.93	382.4		33.47	30.87*
348.93		324.33	24.60	30.87NS
	382.4	324.33	57.57	30.87*

\* Significant at .05 level

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

**FIGURE-3**

L.S.D. POST HOC STATISTICAL COMPARISON FOR PEAK EXPIRATORY FLOW RATE OF MEDITATION, PRANAYAMA AND CONTROL GROUP



**III. DISCUSSION**

It had been hypothesised that , there would be significant differences of the effect of the Meditation and Pranayama on Peak expiratory flow rate among college women. With regards to Pre-Test mean score (Table-39) of Peak expiratory flow rate of Meditation group was obtained 328.86, The Pre-Test mean score of Peak expiratory flow rate of Pranayama group was 322.33 and Pre-Test mean score of Peak expiratory flow rate of Control group was 323.13 respectively. However the standard deviation of Pre-Test Peak expiratory flow rate of meditation group was 9.84, Pre-Test Peak expiratory flow rate of Pranayama group was obtained 9.19 and standard deviation of Pre-Test Peak expiratory flow rate of control group was obtained 10.09 respectively, The result of the study (Table-40) reveals that there were no significant difference were found in pre-test Peak expiratory flow rate ( $F= 1.24$ ) among Meditation, Pranayama and Control group . *In addition*, the Post-Test mean score Table (41) of Peak expiratory flow rate of Meditation group was obtained 348.93, The Post-Test mean score of Peak expiratory flow rate of Pranayama group was 382.4and Post-Test mean score of Peak expiratory flow rate of Control group was 324.33 respectively. However the standard deviation of Post-Test Peak expiratory flow rate of meditation group was 19.35, Post-Test Peak expiratory flow rate of Pranayama group was obtained 20.07 and standard deviation of Post-Test Peak expiratory flow rate of control group was obtained 9.51 respectively, The result of the study (Table 42) reveals that there were significant difference were found in post –test Peak expiratory flow rate ( $F= 0.52$ ) among Meditation , Pranayama and Control group .

The findings of the study (Table 43) reveals that, Statistically significant difference of post-test Peak expiratory flow rate was found between meditation group and pranayama group, the pranayama group was more significantly increase the Peak expiratory flow rate as compare than meditation group . meditation was more effective to increase Peak expiratory flow rate as compare to control, however, No significant difference of post-test Rate pressure product was found between meditation group and control group, whereas, Statistically significant difference of post-test Peak expiratory flow rate was found between pranayama group and control group , the pranayama group was more significantly increase the Peak expiratory flow rate as compare than control group Pranayama was more effective to increase Peak expiratory flow rate as compare to control group. Thus, the hypothesis regarding, there would be significant differences of the effect of the Meditation and Pranayama on Peak expiratory flow rate among college women accepted

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