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## Effect of Sanjivani Pranayam on physiological health of collegiate level boys

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### Abstract

The aim of the present study was to find out the effect of sanjivani pranayam on physiological health of collegiate level boys. In this study a total of 100 boys from various colleges (affiliated to Rashtrasant Tukadoji Maharaj, Nagpur University, Nagpur) situated in the rural area of Nagpur District (affiliated to Rashtrasant Tukadoji Maharaj, Nagpur University, Nagpur), were selected as subjects for the study. Prior to conducting the study, it was ensured that subjects were medically fit (checked by registered medical officer) to undergo experimental requirements. The age of the subjects was between 18 and 25 years. An experimental Group-A (those who undertook the Sanjivani Pranayam training for a period of twelve weeks) consisted of 50 subjects and an equal numbers of subjects were in control Group-B. Subjects were selected randomly and then placed in the above mentioned groups. Pre-test and post-test was conducted on experimental group and control group by the investigator. Following physiological variables were studied, which are resting pulse rate, resting blood pressure, lung capacity and respiration rate. All the measurements were carried out as per standard methods. The significance of difference between the mean scores of different Psycho-Physiological variables of experimental and controlled group was determined by comparing the means of both the groups using dependent 't' test procedure. For testing the difference between the means of two groups the level of confidence was set at 0.05. On the basis of statistical analysis of the data pertaining to pulse rate, respiration rate, diastolic blood pressure and systolic blood pressure it is evident that there is (<0.05) significant decrease in the pulse rate of students after Sanjivani Pranayam training and increase in vital capacity of the study participant after 12 weeks of Sanjivani Pranayam practice.

**Keywords:** sanjivani pranayam, physiological health

### Introduction

Demographic & Socioeconomic changes influence the living & working habits of populations. Moreover, the human health status is also related to the various environmental conditions prevailing in the regions. In addition to above, the recent changes in the society, which includes but not limited to fast paced economic activities, modernization, urbanization & socialization have changed the life style of Indian people. The transition from a traditional to modern lifestyle, consumption of diets rich in fat and calories combined with a high level of mental stress has compounded the problem further. With changing eating habits & the adoption of a sedentary life style has lead to the increasing prevalence of life style diseases like obesity in youngsters. Furthermore, our modern, round-the-clock lifestyle appears to upset metabolism, learning and behaviour in ways that we are just beginning to understand.

The physical fitness and physical performance is necessary for developing the health as well as the confidence in today's youth and nobody can take good health and physical fitness for granted. Hence, the way to ensure the successful life demands regular participation in exercise together with proper diet, adequate relaxation and good health practices. All these can be ensured by regularly practicing Yogic Asanas and Breathing Exercises (Pranayama). Thus, when good health and fitness is achieved, the person's physical and mental wellbeing is ensured. Though the first important step is to master the Asana of posture or to control the body, next exercise is Pranayama. Pranayama is the control of the Prana and the vital forces of the body. It is regulation of the breath. This is the most important step. The aim of Pranayama is the control of Prana. Pranayama begins with the regulation of the breath for having control over the life-currents or inner vital force.

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There are different types of Pranayama and one of them is Sanjivani Pranayama, which is developed by Dr. K.S. Kshrisagar of Bruhan Maharashtra Yoga Parishad. Sanjivani Pranayama is an innovated, modified, simplified and developed Pranayama as a preventive curative and rehabilitative practice. The main characteristics of Sanjivani Pranayama are deep breathing, abdominal breathing, control breathing, aware breathing and intellect, emotional & spiritual breathing. In view of the importance of physiological parameters in the life in general and health in particular this study was carried out to determine the impact of Sanjivani Pranayama on the physiological health of youngsters of rural area of Nagpur District.

## Research Methodology

### Selection of Subjects

In this study a total of 100 boys from various colleges (affiliated to Rashtrasant Tukadoji Maharaj, Nagpur University, Nagpur) situated in the rural area of Nagpur District (affiliated to Rashtrasant Tukadoji Maharaj, Nagpur University, Nagpur), were selected as subjects for the study. Prior to conducting the study, it was ensured that subjects were medically fit (checked by registered medical officer) to undergo experimental requirements. The age of the subjects was between 18 and 25 years.

An experimental Group-A (those who undertook the Sanjivani Pranayama training for a period of twelve weeks) consisted of 50 subjects and an equal numbers of subjects were in control Group-B. Subjects were selected randomly and then placed in the above mentioned groups. Pre-test and post-test was conducted on experimental group and control group by the investigator. Following physiological variables were studied, which are resting pulse rate, resting blood pressure, lung capacity and respiration rate. All the measurements were carried out as per standard methods.

### Experimental period

Experimental period was 12 weeks. Students of Group-A i.e. experimental group practiced the Sanjivani Pranayama for a period of 12 weeks.

### Experimental Factors

In this study, Sanjivani Pranayama was the experimental factor. Before carrying out Sanjivani Pranayama, researcher taught the students the procedure and method of Sanjivani Pranayama for a week prior to the experimental period. The experimental group practiced the Sanjivani Pranayama & the control group followed their own regular practice. The subjects performed Sanjivani Pranayama under the supervision of the researcher thrice a week (Tuesday, Thursday & Saturday) and also the subjects were asked to practice Sanjivani Pranayama at their residence for a period of 30 min. daily for 12 weeks in repetitions according to the individual's capacity.

### Statistical procedure

The significance of difference between the mean scores of different Psycho-Physiological variables of experimental and controlled group was determined by comparing the means of both the groups using dependent 't' test procedure. For testing the difference between the means of two groups the level of confidence was set at 0.05.

## Results and Discussion

**Table 1:** Comparative assessment of pulse rate of boys (control and experimental groups)

Group		Mean (Beats/min)	S.D.	MD	't'	P
Control	Before	80	±4.6	2.0	0.697	Not Significant
	After	82	±5.2			
Experimental	Before	82	±7.4	9.0	3.978	<0.05
	After	73	±6.6			

S.D.: Standard Deviation; 't': t value; P: Probability

Data in the Table 1 reveals the changes observed in pulse rate before and after providing Sanjivani Pranayama training to students. It was observed that the average pulse rate of boys belonging to control group before and after twelve week time period was  $80 \pm 4.6$  and  $80 \pm 5.2$  respectively. No significant difference was observed in the pulse rate of boys belonging to control group, before and after twelve weeks' time. Furthermore, the data also indicates that the pulse rate of boys from experimental group before twelve week time period was ( $82 \pm 7.4$  beats/min) and ( $73 \pm 6.6$  beats/min) after Sanjivani Pranayama training. Data revealed (<0.05) significant decrease in the pulse rate of students after Sanjivani Pranayama training.

**Table 2:** Comparative assessment of respiration rate of boys (control and experimental groups)

Group		Mean	S.D.	MD	't'	P
Control	Before	16.9	±1.5	1.2	1.524	Not Significant
	After	15.7	±1.2			
Experimental	Before	17.5	±1.6	2.4	2.957	<0.05
	After	15.1	±1.5			

S.D.: Standard Deviation; 't': t value; P: Probability

Table 2 indicates data regarding change in rate of respiration of students. It was observed that the average rate of respiration of boys belonging to control group before and after twelve weeks was  $16.9 \pm 1.5$  and  $15.7 \pm 1.2$  breaths/min respectively. No significant difference was observed in the rate of after twelve weeks' time period. It was also revealed by the data that average respiration rate of students belonging to experimental group before and after twelve weeks was  $17.5 \pm 1.6$  and  $15.1 \pm 1.5$  breaths/min respectively.

**Table 3:** Comparative assessment of Vital Capacity of boys (control and experimental groups)

Group		Mean (CC)	S.D.	MD	't'	P
Control	Before	2280	±320	110	1.207	Not Significant
	After	2390	±264			
Experimental	Before	2450	±424	490	3.955	<0.05
	After	2940	±320			

S.D.: Standard Deviation; 't': t value; P: Probability

Table 3 represents the changes observed in vital capacity of students before and after Sanjivani Pranayama training. It was observed that the average vital capacity of boys belonging to control group before and after twelve week period was  $2280 \pm 320$  and  $2290 \pm 264$  cc respectively. No significant difference was observed in the vital capacity of boys belonging to control group, before and after twelve week period. However, data revealed that vital capacity of students before and after twelve week period Sanjivani Pranayama training was  $2450 \pm 424$  cc and  $2940 \pm 320$  cc respectively.

**Table 4:** Comparative assessment of diastolic blood pressure of boys (control and experimental groups)

Group		Mean (mm of Hg)	S.D.	MD	't'	P
Control	Before	78.6	±10.2	2.3	0.098	Not Significant
	After	76.3	±11.6			
Experimental	Before	79.8	±12.3	9.6	2.989	<0.05
	After	70.3	±10.7			

S.D.: Standard Deviation; 't': t value; P: Probability

Above Tables 4 shows data regarding comparative assessment of blood pressure of boys selected in the study. It was observed that the diastolic blood pressure of students belonging to control group before and after twelve week period was 78.6±10.2 and 76.3±11.6 mm of Hg respectively). No significant difference was observed in the diastolic blood pressure of boys belonging to control group, before and after twelve week period. However, data revealed that in diastolic blood pressure of students before and after twelve week period was 79.8±12.3 and 70.3±10.7 mm of Hg respectively.

**Table 5:** Comparative assessment of systolic blood pressure of boys (control and experimental groups)

Group		Mean (mm of Hg)	S.D.	MD	't'	P
Control	Before	128	±13.6	4.0	0.587	Not Significant
	After	124	±11.9			
Experimental	Before	130	±12.4	12.0	2.897	<0.05
	After	118	±11.5			

S.D.: Standard Deviation; 't': t value; P: Probability

Above Tables 5 shows data regarding comparative assessment of blood pressure of boys selected in the study. It was observed that the systolic blood pressure of students belonging to control group before and after twelve week period was 128±13.6 and 124±11.9 mm of Hg respectively). No significant difference was observed in the systolic blood pressure of boys belonging to control group, before and after twelve week period. However, data revealed that there was significant ( $P<0.05$ ) change in systolic blood pressure of students from initial 130±12.4 and 118±11.5 mm of Hg after Sanjivani Pranayam training.

## Conclusions

- **Pulse rate:** On the basis of statistical analysis of the data pertaining to pulse rate, it is evident that there is ( $<0.05$ ) significant decrease in the pulse rate of students after Sanjivani Pranayam training.
- **Rate of respiration:** On the basis of statistical analysis of the data pertaining to rate of respiration, it is evident that there is ( $<0.05$ ) significant decrease in respiration rate of the study participants after 12 weeks of Sanjivani Pranayam practice.
- **Vital capacity:** On the basis of statistical analysis of the data pertaining to vital capacity, it is evident that there was ( $<0.05$ ) significant increase in vital capacity of the study participant after 12 weeks of Sanjivani Pranayam practice.
- **Diastolic blood pressure:** On the basis of statistical analysis of the data pertaining to diastolic blood pressure, it may be concluded that in general there was ( $<0.05$ ) significant decrease in diastolic blood pressure of the study participant after 12 weeks of Sanjivani Pranayam practice.
- **Systolic blood pressure:** On the basis of statistical analysis of the data pertaining to systolic blood pressure, it may be concluded that in general there was ( $<0.05$ )

significant decrease in systolic blood pressure of the study participant after 12 weeks of Sanjivani Pranayam practice.

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