



IMPACT OF ASANA AND PRANAYAMA PRACTICES ON SELECTED PHYSIOLOGICAL PARAMETERS AMONG WOMEN STUDENTS "

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ABSTRACT

The purpose of the study was to analyze the impact of asana and pranayama practices on selected physiological parameters among women students. To achieve these purpose sixty women students were selected from various faculties of Annamalai University, Tamilnadu, India selected as subjects. The age of the subjects ranged from 18 to 23 years. Physiological Variables such as Resting pulse rate and Vital capacity were selected as criterion variables and assessed by palpation method in beats/minute and Wet Spirometer respectively. Analysis of covariance (ANCOVA) was used as statistical technique. Scheffe's test was followed as a post hoc test. The results of the study showed that there was a significance exist between asana practices group and pranayama practices group and on Resting Pulse Rate and Vital capacity , when compared to the control group.

Yogic Practices, Asana, Pranayama, Physiological, Resting Pulse Rate and Vital capacity .

INTRODUCTION

The term *Lifestyle* means "The Way of People Live", reflecting a whole range of social values, attitudes and activities. It is composed of cultural and behavioral patterns and life-long personal habits (e.g., smoking, alcoholism and sedentary life style) that have developed through process of socialization.

Many current day health problems especially in the developed countries (e.g., coronary heart disease, diabetes, obesity, lung cancer, drug addiction) are associated with lifestyle changes. In developing countries such as India where traditional lifestyles still persists, risks of illness and death are connected with lack of sanitation, poor nutrition, and personal hygiene, elementary human habits, customs and cultural patterns.

Yoga is the universal religion, a way of life, which is above all castes, creeds, languages, regions and nations. Yoga consists of eight Angas or Parts, namely, Yama, Niyama, Asana, pranayama, Pratyahara, Dhara-na, Dyana and Samadhi. All these put together stands for yoga. Yam as and Niyamas are to be given to the children up to the age of puberty, that is, up to twelve years of age. Asanas and Pranayama constitute the aspect of physical training in the field of yoga. These should be introduced only from the age of twelve onwards and never before that age. Children under twelve possess a very mobile spinal column.

Asanas are supplying agents and the children under twelve, positively need only strengthening exercises and not supplying exercises at all.

Pranayama is breathing techniques for physical and mental balance. The science of pranayama teaches us how to reduce the respiratory and heart rate, while increasing the quantum of oxygen drawn in and decreasing the outflow of breath. This can be as minimal as two or three cycle per minute. When the respiratory rate is thus lowered, the metabolic rate of the body also reduces. The body is brought to a state of temporary hibernation. All the cells are rested, and relaxation is ensued. The sympathetic overdrive is reduced, with consequent energy conservation. In pranayama, the mind is kept attentive so that the rhythm of breathing is regulated. The frontal brain, which is the seat of intellectual activity, is made quiet. Complete neuro-physiological relaxation occurs.

METHODOLOGY

	Asana Practices Group	Pranayama Practices Group	Control Group	Source of Variance	Sum of Squares	Df	Mean Squares	F - Radio
Pre Test Mean	69.22	69.75	70.25	Between	11.0	2	5.50	1.63
				Within	193.7	57	3.38	

Post Test Mean	66.61	64.81	70.35	Between	320.7	2	160.35	34.57*
				Within	264.5	57	4.46	
Adjusted Post Test Mean	66.69	64.80	70.72	Between	302.3	2	151.15	32.59*
				Within	259.6	56	4.46	

The purpose of the study was to analyze the impact of asana and pranayama practices on selected physiological parameters among women students. To achieve these purpose sixty women students were selected from various faculties of Annamalai University, Tamilnadu, India selected as subjects. The age of the subjects ranged from 18 to 23 years. The subjects were assigned at random to one of the three groups (n=20), in which Experimental Group-I had undergone asana practices programme, Experimental Group-II had undergone Pranayama Practices programme and Group-III had acted as control group and they had not undergone any special training programme. Physiological Variables such as Resting pulse rate and Vital capacity were selected as criterion variables and assessed by palpation method in beats/minute and Wet Spirometer respectively. Analysis of covariance (ANCOVA) was used as statistical technique. Scheffe's test was followed as a post hoc test..

SELECTION OF VARIABLES AND TESTS AND TRAINING PROTOCOL

TABLE-1

S.No	Criterion Variable	Test	Unit of Measurement
1.	Resting Pulse Rate	Palpation method	In beats/ minute
2.	Vital Capacity	Spiro Meter	In milliliters

The training programmes were scheduled for one session a day, each session lasted between 45 minutes and an hour, approximately excluding warming up and relaxation in morning session. During the training period, the experimental groups underwent their respective training programme three days per week (alternate days) for eight weeks in addition to their regular programme of the course of study as per their curriculum. The training sessions were held every other day, so that the body could rest. The students trained every Monday-Wednesday & Friday.

STATISTICAL ANALYSIS

The selected variables for which data were collected from three groups prior to and after experimentation on selected physiological variables were statistically examined for significant difference, if any, by applying the analysis of covariance (ANCOVA) with the help of SPSS package. The level of significance was accepted at P < 0.05.

RESULTS AND DISCUSSION

**TABLE-2
COMPUTATION OF ANALYSIS OF COVARIANCE ON RESTING PULSE RATE**

The required table value for significant at 0.05 level of confidence for 2 and 57

(df=3.15. 2 and 56 (df)=3.15 respectively)

Table- 2 show that, the adjusted post test means on resting pulse rate of asana, pranayama practices group and control groups are 66.69, 64.80 and 70.72 respectively. The obtained post test 'F' ratio value of 32.59 was greater than the required table value of 3.15 for significance at 0.05 level of confidence with degrees of freedom 2 and 57. The result of the study shows that significant differences existed between the adjusted post test mean of asana, pranayama practices group and control groups in reducing the resting pulse rate.

TABLE - 3

ADJUSTED POST TEST MEANS				Confidence Interval
Asana Practices Group	Pranayama Practices Group	Control Group	Mean Differences	
66.69	64.80		1.89*	1.73
67.48		70.27	3.58*	1.73
	64.80	70.27	5.47*	1.73

*Significant

While considering the two training methods, from the results presented in table - 3 it was found that pranayama practices group was better than asana practices group in reducing resting pulse rate.

**TABLE -4
COMPUTATION OF ANALYSIS OF COVARIANCE ON VITAL CAPACITY**

	Asana practices Group	Pranayama Practices Group	Control Group	Source of Variance	Sum of Squares	Df	Mean Squares	F - Ratio
Pre Test Mean	3440.00	3450.00	3460.00	Between	3000.00	2	1500.00	0.01
				Within	8357000.00	57	198976.19	
Post Test Mean	3496.67	3603.33	3486.67	Between	125444.44	2	62722.22	0.31
				Within	8567000.00	57	203976.19	
Adjusted Post Test Mean	3506.74	3603.33	3476.59	Between	131511.64	2	65755.82	33.49*
				Within	80502.18	56	1963.47	

The required table value for significant at 0.05 level of confidence for 2 and 57 (df) = 3.15, 2 and 56 (df) = 3.15 respectively)

Table - 4 shows that, the adjusted post test means on vital capacity of asana, pranayama practices group and control groups are 3506.74, 3603.33 and 3476.59 respectively. The obtained 'F' ratio value of 33.49 was greater than the required table value of 3.15 for significance at 0.05 level of confidence with degrees of freedom 2 and 57. The result of the study shows that significant differences existed between the adjusted post test mean of asana, pranayama practices group and control groups in improving the vital capacity. Since the adjusted post test mean 'F' value was found to be significant, the results were subjected to post hoc analysis using Scheffe's test. The results were presented in table - 5.

Table - 4 also indicate that the adjusted post test means on vital capacity of asana, pranayama practices group and control groups are 3506.74, 3603.33 and 3476.59 respectively. The obtained 'F' ratio value of 33.49 was greater than the required table value of 3.15 for significance at 0.05 level of confidence with degrees of freedom 2 and 57. The result of the study shows that significant differences existed between the adjusted post test mean of asana, pranayama practices group and control groups in improving the vital capacity. Since the adjusted post test mean 'F' value was found to be significant, the results were subjected to post hoc analysis using Scheffe's test. The results were presented in table - 5.

**TABLE - 5
SCHEFFE'S PAIRED MEAN TEST SCORES ON VITAL CAPACITY**

ADJUSTED POST TEST MEANS				Confidence Interval
Asana Practices Group	Pranayama Practices Group	Control Group	Mean Differences	
3506.74	3603.33		96.59*	41.88
3506.74		3476.59	30.15	41.88
	3603.33	3476.559	126.74*	41.88

*Significant

Table - 5 shows that, it was concluded from the result of the study that vital capacity was not significantly improved by means of aerobic training. However there was significant existed between experimental groups and control group.

CONCLUSIONS

Within the limitations of this study, the following conclusions were down:

1. Significant decreases on resting pulse rate have been observed following eight weeks of asana and pranayama practices, when compared to control group.
2. When comparing the two experimental groups, pranayama practices was significantly better than the asana practices in reducing resting pulse rate.
3. The participants of pranayama practices have exhibited significant increase on vital capacity when compared to asana practices and control groups.

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