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## Efficacy Of Yogasanas And Pranayama Practices On Selected Physiological Parameters Among College Men Students

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### Abstract

The yogasanas and pranayama practices were designed to facilitate development and integration of the human body, mind, and breath to produce structural and physiological effects. The body is the temple of soul and to reach a harmony of the mind, body and spirit, the body must be physically fit. Aims of the study: The purpose of this study was to examine the efficacy of yogasanas and pranayama practices on Selected Physiological parameters among college men Students. Design: This study comprised of twelve weeks randomized controlled trial. Methods: A total of thirty college men students were participated in this study voluntarily. They were randomly divided into two groups' namely experimental group and control group each group consists of fifteen subjects (n=15) and their age ranged between 23 and 27 years. The experimental group underwent yogasanas and pranayama for one hour per day, three days per week for twelve weeks and a control group did not participated any experimental treatment. The Baseline and after completion of the yogasanas and pranayama for twelve weeks vital capacity and breath holding time were done by using standard techniques.. Statistical analysis: Data were analyzed by applying ANCOVA statistical technique. Significance level was set at  $P < 0.05$ . Results: After the twelve weeks of the yogasanas and pranayama practices brought significant improvement in the vital capacity and breath holding time in the experimental group ( $p < 0.05$ ). There were no significant differences in the control group. Conclusion: The yogasanas and pranayama proved to be a useful modality for increased vital capacity and breathe holding time in college men Students.

Keywords: yogasanas, Pranayama, Vital Capacity and Breath Holding Time.

### Introduction

*All the orthodox systems of Indian Philosophy have one goal in view, the liberation of the soul through perfection. The method is by Yoga (Swami Vivekananda (2007).*

Yoga is an ancient discipline designed to bring balance and health to the physical, mental, emotional, and spiritual dimensions of the individual. It is long popular practice in India that has become increasingly more common in Western society. "Yoga" means union of our individual consciousness with the Universal Divine Consciousness in a super-conscious state known as *Samadhi* (Swami Vivekananda (2007).

Yoga is defined as a practice consisting of three components, gentle stretching; exercises for breath control; and meditation as a mind-body intervention (Ernst, 2001). The version used mainly in the West is hatha yoga, which consists of an integration of asana (postures), pranayama (breathing exercise), and meditation (Riley, 2004).

Asanas are an integral part of yoga. Yoga uses the body to exercise and controls the mind so that at a later stage the body and the mind together may harmonize with the soul. The yogasanas affect and penetrate every single cell and tissues making them come to life.

Pranayama, the yogic art of breathing, comes from the root words prana and ayama. Prana means "life force" and ayama means "expansion, manifestation, or prolongation." The practice of pranayama therefore is the practice of expanding our own prana so that it harmonizes with the universal prana. This results in oneness or merging of a person's own consciousness with universal consciousness. It is in this union that we realize we are not simply a limited physical body, but are, in fact, an immortal spirit.



### Material And Methods

The aim of the study was to determine the efficacy of yogasanas and pranayama practices on Physiological parameter among college men Students. Thirty college men students were selected from Gundur, Andhra Pradesh and their ages ranged between 23 to 27 years. The subjects (N= 30) were randomly assigned to two equal groups of fifteen men in each. The groups were assigned as yogasanas and pranayama group and control group. Before the administration of the test, all the subjects were oriented for the purpose of the experimental treatments and the tests. They were made known about the importance of the treatment and tests. All the subjects wholeheartedly co-operated for this study. Pre tests were conducted for all the subjects on vital capacity and breathe holding time. The experimental groups participated in their respective experiments, namely, yogasanas and pranayama for a period of three days for twelve weeks. Yogasanas and pranayama program consisted of 60 minutes with 10 minutes warm up, 35 minutes on yogasanas and pranayama practices and 10 minutes cool down. The intensity of practices was then increased by 5% every 2 weeks. The duration was also increased 5 minutes per session every 2 week. After the experiment, post test scores were obtained and compared with using Analysis of covariance (ANCOVA) statistical technique was used to test the differences among the experimental groups. The significance level of this study was set at  $p < 0.05$ .

### Results On Vital Capacity

The following tables illustrate the statistical results on the efficacy of yogasanas and pranayama practices on vital capacity in college men students.

Table I: COMPUTATION OF ANALYSIS OF COVARIANCE ON VITAL CAPACITY  
(Scores in litter)

Test	Con.Group	Int.Group	SV	SS	df	MS	F
Pre Test	4.11	4.23	B	0.12	1	0.120	1.19
			W	2.82	28	0.10	
Post Test	4.18	4.69	B	1.98	1	1.98	12.48*
			W	4.43	28	0.16	
Adjusted	4.25	4.62	B	0.97	1	0.97	36.31*
			W	0.73	27	0.03	
Mean Gain	0.07	0.46					

\*Significant at 0.05 level

The statistical analysis from the table I show that the pre, post and adjusted post test means of Yogasanas and pranayama practices group and control. In the above table, the results clearly noticed that Yogasanas and pranayama practices group responded with more positive influences on vital capacity when compared with the control group.

### Results On Breath Holding Time

The results on the efficacy of yogasanas and pranayama practices on breathe holding time in college men students is Presented in table II.

Table II: COMPUTATION OF ANALYSIS OF COVARIANCE ON BREATH HOLDING TIME  
(Scores in Seconds)

Test	Con.Group	Int.Group	SV	SS	df	MS	F
Pre Test	44.67	45.93	B	12.03	1	12.033	1.41
			W	238.27	28	8.51	
Post Test	44.80	50.87	B	276.03	1	276.03	38.24*
			W	202.13	28	7.22	
Adjusted	45.34	50.32	B	176.89	1	176.89	183.80*
			W	25.98	27	0.96	
Mean Gain	0.13	4.93					

\*Significant at 0.05 level



The statistical analysis from the table II shows that the pre, post and adjusted post test means of Yogasanas and pranayama practices group and control group. From that it can be clearly noticed that Yogasanas and pranayama practices group responded to the training with more positive influences of breath holding time when compared with the control group.

#### **Discussion On Findings**

Our culture is becoming more and more health conscious and realizing that taking care of the external form, helps with the health and healing of the internal systems. Yoga has become increasingly popular among people from all walks of life. Yoga means union, the union of masculine and feminine energy, the union of strength and flexibility. The word asana means pose in the ancient Indian language of Sanskrit. It is through combining special breathing techniques (pranayama) with asana that begin to tap into the power of the practice.

The analysis of covariance on vital capacity and breathe holding time indicated that the there was significant improvement due to combined yogasanas with pranayama (breathing techniques) practices in college men. Hence, it was proved that there were significant differences among the experimental and control groups in post experimental scores. The findings are in conformity with the observations of other researchers in their recent studies. Madanmohan, et al.,(1992) reported that 12 weeks of yoga practice results in a significant increase in maximum expiratory pressure, maximum inspiratory pressure, breath holding time after expiration, breath holding time after inspiration. Joshi *et al.*, (1992) have also demonstrated that 6 weeks of pranayama breathing course resulted increases in the forced vital capacity and prolongation of breath holding time. In the present study, similar findings were also noted and reported that vital capacity and breathe holding time improved significantly due to yogasanas and pranayama practice when compared to baseline data of the subjects.

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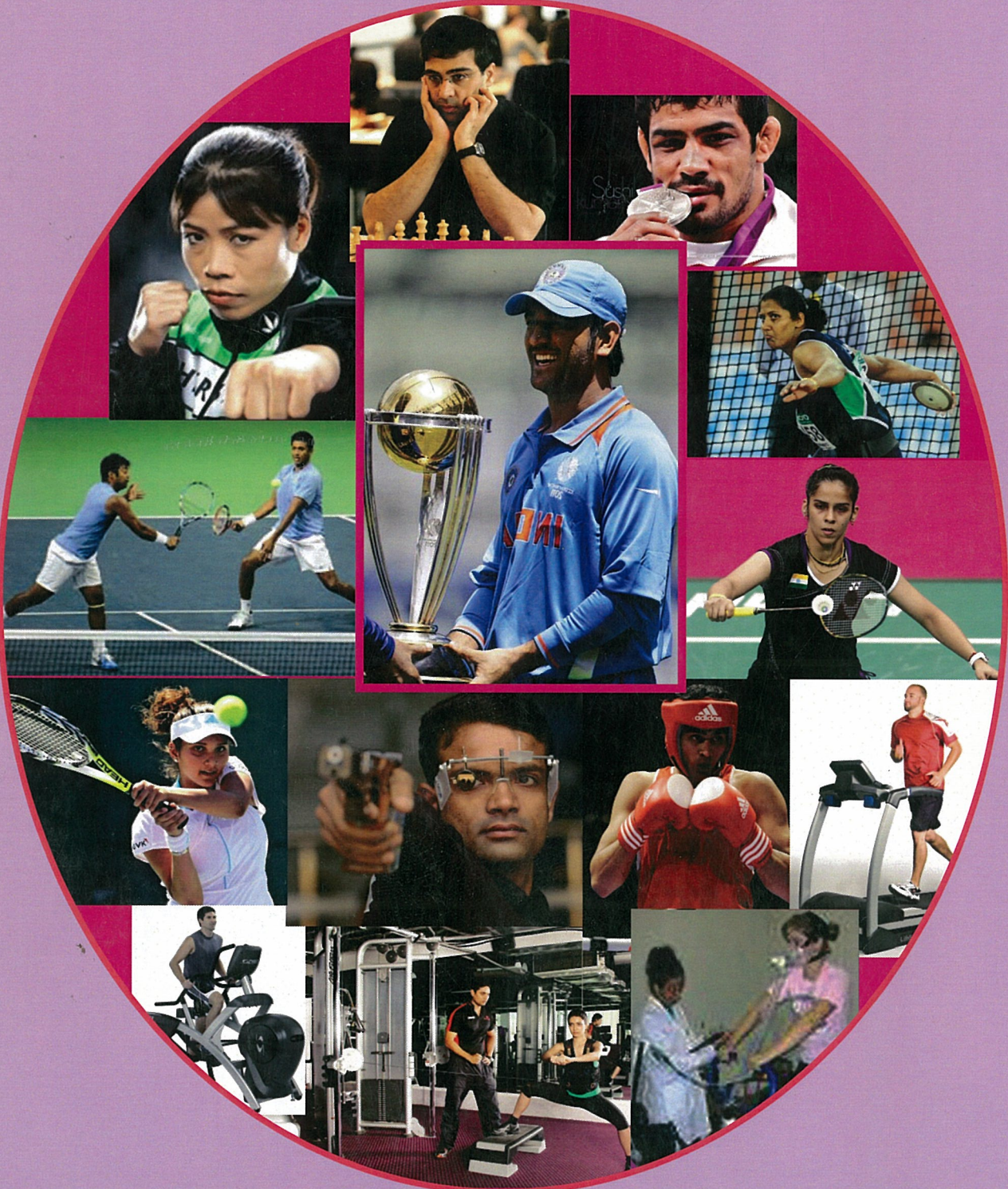


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# **Influence of Yogasana and Pranayama on Selected Psychological Parameters in Post Graduate Students**

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## **Abstract**

The role of yoga in sports is becoming increasingly popular to reduce anxiety and aggression and also to unfold the potentialities hidden in every sportsman. The purpose of this study was to examine the influence of Yogasana and Pranayama on Selected Psychological parameters in Post Graduate Students. This study comprised a twelve week randomized controlled trial. A total of 40 physical education students participated in this study voluntarily. They were randomly divided into two groups: those undertaking a Yogasana and Pranayama (n=20) and a control group (n=20). Their age ranged between 23 and 27 years. The subjects took part in a Yogasana and Pranayama for one hour per day, three days a week for twelve weeks. The Taylor's manifest anxiety scale was used to assess anxiety of subjects and aggression was assessed by using Pati's aggression scale before and after the completion of the Yogasana and Pranayama. Data were analyzed by applying ANCOVA statistical technique. Significance level was set at  $P < 0.05$ . After the twelve weeks of the Yogasana and Pranayama, significant differences were found in the anxiety and aggression in the experimental group ( $p < 0.05$ ). There were no significant differences in the control group after the experiment in terms of the same measures ( $P > 0.05$ ). The Yogasana and Pranayama proved to be a useful exercise modality for reduced anxiety and aggression in Post Graduate Physical Education Students.

**Key words:** Yogasana and Pranayama, anxiety and aggression.

## **Introduction**

Yoga is an ancient discipline designed to bring balance and health to the physical, mental, emotional, and spiritual dimensions of the individual. It is long popular practice in India that has become increasingly more common in Western society. "Yoga" means union of our individual consciousness with the Universal Divine Consciousness in a super-conscious state known as Samadhi (Vivekananda, 2007). A sound mind grows only with a sound body and the growth of one is complementary to that of the other. This is indicated during the period of illness, when ailing body effects the usually attitude of mind. Mental discontent is caused by physical disequilibrium.

Man is endowed with mind, intellect and ego collectively known as consciousness, which is a source of thinking, understanding and acting. As the wheel of life turns, consciousness experiences the fine miseries of ignorance, selfishness, attachment, aversion and love of life. Asanas and pranayama bring the wavering mind to a state of stability.

## **Review of Related Literature**

Gupta et al., (2006) examined the short-term impact of a comprehensive, yet brief, lifestyle intervention based on yoga in diseased and normal individuals. The research subjects had a history of hypertension, coronary artery disease,



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diabetes mellitus, obesity, psychiatric disorders and thyroid disorders. The intervention consisted of asanas, pranayanama, relaxation techniques, group support, individualized advice, lectures and films on philosophy of yoga, and the place of yoga meditation in daily life, meditation, and stress management. Outcome measures were anxiety scores taken on the first and last days of the course. Among diseased individuals, improvement was seen in anxiety levels. Short educational program for stress management and lifestyle modification based on yoga leads to reduction in anxiety.

Stueck et al., (2005) determined whether yoga can assist in reducing stress responses in preteens. Forty-eight 11-12-year olds with abnormal exam anxiety participated in the study with 21 students assigned to the experimental group to participate in a 15-session program of relaxation, yoga, and other meditation and social interaction exercises. Each session lasted one hour. A questionnaire with stress-related items was given to students before the sessions began, immediately after the 15-week program, and three months after the program ended. Students involved in the program showed improvement in several stress measures. Significant effects were seen in a comparison immediately after the training: decreased aggression, decreased helplessness in school, decreased physical complaints, and improved stress coping abilities. In a comparison 3-month later, the following effects were seen: improvements in emotional balance, decreased anxiety, decreased shyness in social contacts, and decreased impulsiveness. In the first post-test measurement, parents also reported their students as being calmer and more balanced (71.4%), less impulsive, aggressive and hot-tempered (38.1%), more concentrated (38.1%), and having fewer complaints (38.1%). Comparisons to the control group were not statistically measured.

### **Methodology**

The purpose of the study was to examine the influence of yogasanas and pranayama on selected psychological parameters in Post Graduate students. The subjects were selected from Rajivi Gandhi Post Graduate College, Rajahmundry, Andhra Pradesh, conducted a yoga camp for post graduate students for 3 months. Sixty students attended this camp, out of which forty subjects were selected at random by lot procedure. Their age ranged from 23 to 27 years. They were asked to undergo medical checkup and were found to be normal, healthy and fit enough to undergo experimentation. Random group design was used for this experimental study. Before the administration of tests and yogasanas and pranayama practices, the purpose of the study was explained in details to the subjects to ensure proper understanding and effective co-operation. The method of doing each yogasanas, pranayama was explained to the subjects before the experiment. The investigator himself demonstrated each item of the yogasanas, pranayama. The model performance by some of the subjects was also done to make the subjects clearly understand all the techniques. The following Yogasana and Pranayama were Practices: Standing Postures: Natarajasana, Trikonasana, Padhastasana. Sitting Postures: Paschimottanasana, Vajrasana, Ushtrasana, Shashankasana, and Padmasana. Prone Postures:



## Yogasana and Pranayama

Makarasana, Bhujangasana, Dhanurasana. Suppine Postures: Matsyasana, Halasana and Chakrasana. Relaxation Posture: Shavasana. Pranayama: Anuloma-Viloma, shitali, Sitkari and Ujjayi. Asanas, Pranayama were practiced for 45 minutes in this order. The subjects were tested on the selected psychological parameters at the beginning (pre-test) and at the end of the experimental period(post-test). The data collected from the two groups on the selected psychological parameters were used for the statistical treatment to find out whether there was any significant difference between the adjusted means by analysis of covariance method. The level of significance was fixed at .05 level. The analysis of data was done in SPSS/PC+ computer system using standard statistical package.

## Results

### Analysis of Anxiety

The data of anxiety before (pre-test) and after the yogasanas and pranayama (post-test) of control group, experimental group were analyzed and presented in Table I. The pre and post-test mean of two groups have been presented in Fig.1.

**Table-I**

**Computation of Analysis of Covariance on Anxiety**

Test	Con. Group	Exp Group	SV	SS	df	MS	F
Pre Test	25.10	25.20	B	1000	1	.1000	.0084
			W	455.00	38	11.97	
Post Test	24.25	20.20	B	164.03	1	164.03	16.36*
			W	380.95	38	10.02	
Adjusted Mean	24.26	20.18	B	166.04	1	166.04	17.45*
			W	352.04	37	9.51	

\*Significant at 0.05 level of confidence for the degree of freedom 1 and 38 is 4.09 and df 1 and 37 is 4.106

The result presented in Table I indicated that the pre-test mean of the control group was 25.10 and experimental group was 25.20. The obtained F-ratio of .0084 was lesser than the required table value of 4.096. It indicated that, no significant difference existed between the pre-test mean of the two groups.

The post-test mean of the control group was 24.25 and the experimental group was 20.20. The obtained F-ratio for the post-test mean 16.36 was found to be higher than the table value of 4.096 required for significant 1 and 38 degrees of freedom.

The adjusted post-test mean of the control group and experimental group were 24.26 and 20.18 respectively. The obtained F-ratio was 17.45 was greater than the tabulated F-ratio for degrees of Freedom 1 and 37 was 4.106. Hence the obtained F-ratio was significant at .05 level of confidence. The results of

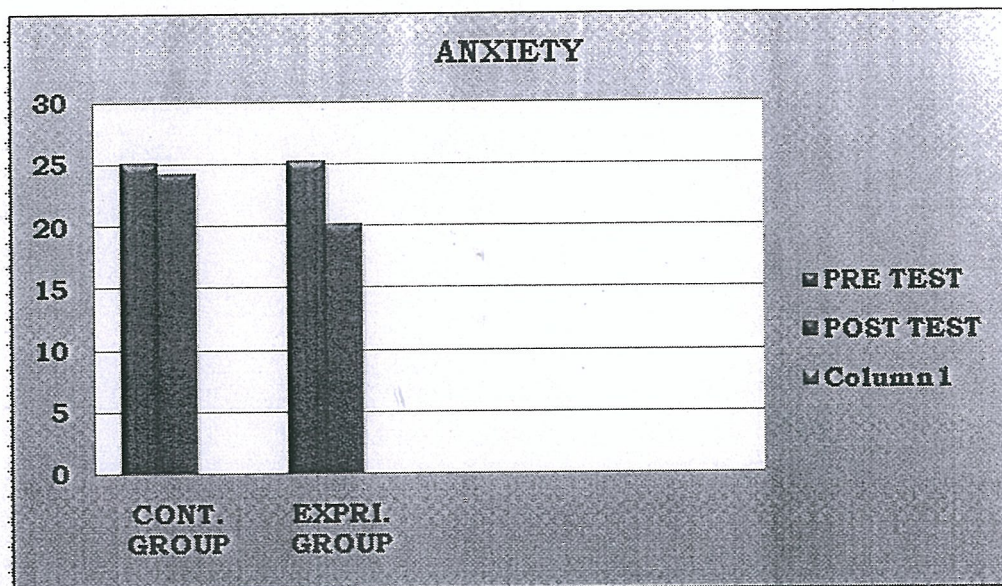


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the study revealed that there was a significant reduction in anxiety as a result of the practice of yogasanas and pranayama.

**Figure-1**

**Bar Diagram on Pre and Post Test Means of Anxiety**



### Analysis of Aggression

The data of aggression before (pre-test) and after the yogasanas and pranayama (post-test) of control group, experimental group were analysed and presented in Table II. The pre and post test mean of two groups have been presented in Fig. 2.

**Table-II**

**Computation of Analysis of Covariance on Aggression**

Test	Con. Group	Exp Group	SV	SS	df	MS	F
Pre Test	510.50	530.90	B	4161.60	1	4161.60	1.72
			W	92116.80	38	2424.13	
Post Test.	512.95	463.35	B	24601.60	1	24601.60	11.80*
			W	79201.50	38	2084.25	
Adjusted Mean	519.23	457.07	B	36963.81	1	36963.81	30.87*
			W	44304.80	37	1197.43	

\*Significant at 0.05 level of confidence for the degree of freedom 1 and 38 is 4.09 and df 1 and 37 is 4.106



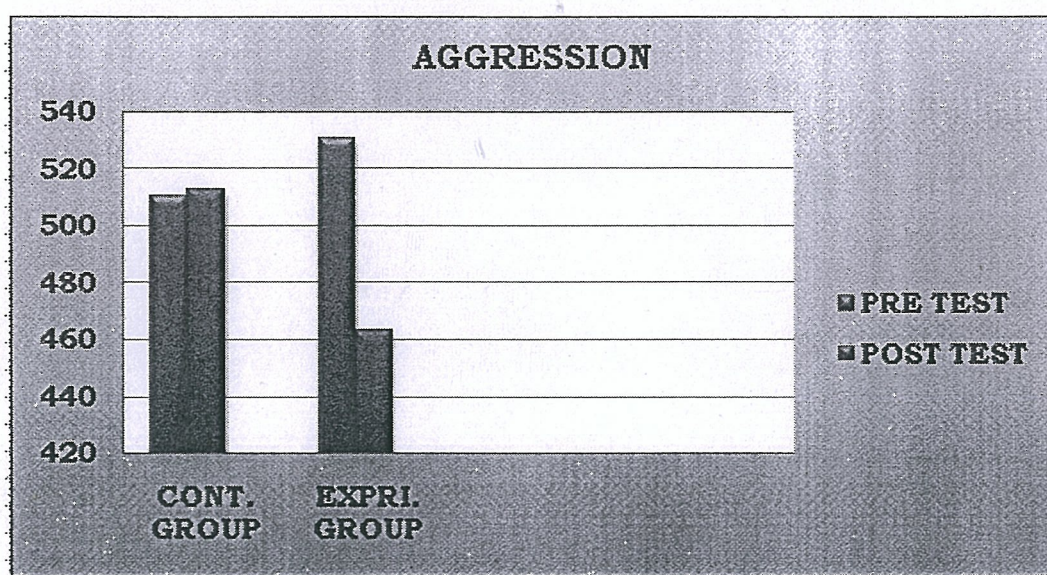
## Yogasana and Pranayama

Table II indicated that the pre-test mean of the control group was 510.50 and experimental group was 530.90. The obtained F-ratio of 1.72 was lesser than the required table value of 4.096. It proved that, no significant difference existed between the pre-test mean of the two groups.

The post-test mean of the control group was 512.95 and the experimental group was 463.35. The obtained F-ratio for the post-test mean, 11.80 was found to be higher than the table value of 4.096 required for significant 1 and 38 degrees of freedom.

Figure-2

Bar Diagram on Pre and Post Test Means of Aggression



The adjusted post-test mean of the control group and experimental group were 519.23 and 457.07 respectively. The obtained F-ratio 30.87 was greater than the required tabulated F-ratio of 4,106. Hence the obtained F-ratio was significant at .05 level of confidence. The results of the study revealed that there was a significant reduction in aggression as a result of the practice of yogasanas and pranayama.

### Discussion and Findings

The results of the study revealed that there was significant reduction in anxiety as a result of practice of yogasanas and pranayama. It was hypothesized that yogasanas and pranayama practices would decrease anxiety, and the same was accepted. The findings of the study indicated that aggression of subjects had decreased significantly due to practice of yogasanas and pranayama. It was hypothesized that yogasanas and pranayama, practices would decrease aggression, thus the hypothesis was accepted. It was observed from the (Stueck and Gloeckner, 2005 & Deshpande Nagendra and Raghuram, 2008) review



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that studies on anxiety and aggression have been undertaken extensively and their results showed decrease in aggression.

### **Conclusions**

In the light of the study undertaken with certain limitations imposed by the experimental conditions, the following conclusions were drawn.

1. Yogasanas and pranayama reduces the level of anxiety.
2. Yogasanas and Pranayama reduced aggression.

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## COMPARATIVE STUDY OF THE EFFECT OF SELECTED BENDING EXERCISES AND SELECTED WEIGHT TRAINING EXERCISES ON THE DEVELOPMENT OF FLEXIBILITY AMONG MEN DEGREE COLLEGE STUDENTS.

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3.6

### INTRODUCTION

In the olden days the Primitive man Participated in multi various activities without any programmes of conditioning training or general physical fitness. Physical activity was his life. By nature of daily activity the primitive man built strong body structure compared with civilized man of today. Now a days Indian citizens are having less physical fitness because of lack of exercise and avoidance of tension by the use of drugs, only a people strive to maintain their body.

It is needless to mention that the modern man to day lacks the muscular power of the early man, which once elevated and sustained his physical skills to a high level. Greeks knew that intelligence and skill could function at the peak of their capacity only when the body was healthy and strong and that hardy spirits and tough minds usually coexisted in sound bodies.

### DEFINITION AND TERMS

#### Training:-

The word of training means different things in different fields. Training is doing physical exercises for the improvement of performance.

Training means are various activity and other objects. Methods and procedures which are used for the improvement, maintenance and recovery.

#### Weight Training:-

Weight training is the use of weight in exercising to develop muscle power and strength by the over load principles.

- One of the conditioning devices for sports and games.
- Several repetitions.
- Movements according to the need in an activity.
- No specific rules.

#### Flexibility:-

Flexibility is a motor ability which is not clearly a conditional or co-ordinative ability it depends partly on energy liberation process and parts on the performance C.N.S.

Flexibility can be defined as the ability to execute movements with greater amplitude or range.

Stretchability and elasticity are the special qualities of the muscles and ligaments by which these can be stretched and can regain their normal length.

T of flexibility.

- a. Passive flexibility
- b. Active flexibility.



**Selection of Variables:**

The investigator reviewed the available scientific literature on the basic of discussion with the experts.

**Variables:**

- 1) Flexibility: Goniometer instrument used for the study of the flexibility (Range of the Joint)

**Experimental Design and procedures:**

Forty five healthy students without any physical disabilities we selected they were divided into three balanced groups of fifteen each.

- A. Weight training exercises group
- B. Selected bending exercise group
- C. Control group.

**METHODOLOGY**

The investigation selection forty five healthy students were selected from men A.K.R.G Degree College age between 18 to 22 years at special camp.

**Weight Training Exercises:**

Four weight training exercises were selected as experimental variables.

1. The fore arm curl
2. Wrist roller
3. Hid flexion with boots
4. Squats.

**Training schedule:**

1. Duration of phase: 6 weeks
2. 3 days per week - 3 sets
3. Total time : 20 minutes

**Selected Bending Exercises:**

Bending exercises for thigh knee, hip and wrist stretching exercises will give for Hamstring muscles, abdominal muscles and pronator muscles.

- 1) For word bend
- 2) Back ward bend
- 3) Burpee
- 4) Wrist rotation

**Training Schedule :**

- 1) Duration of phase : 6 weeks
- 2) 3days par weeks : 3 sets
- 3) Total time : 20 minutes

**Analysis of the Data and Results of the Study****Selection of tests**

Based on the availability of the instruments feasibility and also based on the review, the selected variables were tested by using standardized test items and the following test items were selected for the study and it was presented in Table - 1.



**TESTS SELECTION**

Sl.No.	Variables	Test Items
1.	Wrist Flexion	Goniometer
2.	Wrist Extension	Goniometer
3.	Hip Flexion	Goniometer
4.	Hip Extension	Goniometer

**INTRA - CLASS CORRELATION CO-EFFICIENT VALUES ON SELECTED CRITERION VARIABLES**

Sl.No.	Test	'R' Value
1.	Wrist Flexion	0.88*
2.	Wrist Extension	0.92*
3.	Hip Flexion	0.90*
4.	Hip Extension	0.86*

Significant at .05 level of confidence.

(The table value required for significance at .05 level of confidence with df 9 was 0.767)

**ANALYSIS OF DATA AND RESULTS OF THE STUDY**

The Purpose of the study was to compare the influence of selected weight training exercises and selected bending exercises on the development of the flexibility.

**ANALYSIS OF COVARIANCE ON WRIST FLEXION BETWEEN WEIGHT TRAINING GROUP BENDING EXERCISE GROUP AND CONTROL GROUP.**

	Weight Training Group	Bending Exercise Group	Control Group	SOV	SS	Df	MS	F
Pre-test Means	72.00	72.00	71.00	B :	10.00	2	5.00	0.071
S.D.	9.22	8.70	7.02	W :	2940.00	42	70.00	
Post -test Means	75.33	76.00	72.00	B :	137.78	2	68.89	1.30
S.D.	7.84	7.75	6.11	W :	2223.33	42	52.94	
Adj.	75.06	75.73	72.54	B :	84.69	2	42.35	5.85*
Post - test Means				W :	296.67	41	7.24	

\*Significant at .05 level of confidence. Table value required for significance t.05 level with df2 and 42 and 2 and 41 are 3.22 and 3.21.



**ANALYSIS OF CO VARIANCE ON WRIST EXTENSION BETWEEN WEIGHT TRAINING GROUP' BENDING EXERCISE GROUP AND CONTROL GROUP.**

	Weight Training Group	Bending Exercise Group	Control Group		SOV	SS	Df	MS	F
Pre-test	36.67	36.00	36.67	B :	4.44	2		2.22	
Means								0.056	
S.D.	5.56	7.60	5.56	W:	1676.67	42		39.92	
Post-test	41.00	41.00	38.00	B:	90.00	2		45.00	
Means									1.11
S.D.	6.04	7.61	5.25	W:	1710.00	42		40.714	
					113.18	2		56.59	
Adj.	40.79	41.43	37.79						
Post - test									14.15*
Means				W :	164.02	41		4.00	

\*Significant at .05 level of confidence. Table value required for significant at .05 level with df2 and 42 and 2 and 41 are 3.22 and 3.21.

**ANALYSIS OF CO VARIANCE ON HIP FLEXION BETWEEN WEIGHT TRAINING GROUP BENDING EXERCISE**

	Weight Training Group	Bending Exercise Group	Control Group		SOV	SS	Df	MS	F
Pre-test	103.33	101.67	101.67	B:	27.78	2		13.89	
Means								029	
S.D.	6.45	7.24	7.24	W:	2050.00	42		48.81	
Post-test	106.33	109.00	102.00	B:	374.44	2		187.22	
Means								2.48	
S.D.	8.34	8.90	8.82	W:	3173.33	42		75.56	
				B:	371.50	2		184.75	
Adj.	105.35	109.49	102.49						
Post - test									4.83*
Means				W :	1578.18	41		38.49	

\*Significant at .05 level of confidence. Table value required for significance at .05 level with df2 and 42 and 2 and 41 are 3.22 and 3.21.



**ANALYSIS OF CO VARIANCE ON HIP EXTENSION BETWEEN WEIGHT TRAINING GROUP BENDING EXERCISE GROUP AND CONTROL GROUP**

	Weight Training Group	Bending Exercise Group	Control Group		SOV	SS	Df	MS	F
Pre-test Means	42.00	46.00	40.33	B:	167.78	2		83.89	
S.D.	7.27	5.67	7.19	W:	1913.33	42		45.56	
Post-test Means	47.00	50.33	44.33	B:	271.11	2		135.56	
S.D.	7.27	5.82	6.23	W:	1756.67	42		41.83	3.24*
				B:	23.43	2		11.71	
Adj. Post - test Means	46.23	47.40	48.04						2.25
					1578.18	41		38.49	

\*Significant at .05 level of confidence. Table value required for significance at .05 level with df2 and 42 and 2 and 41 are 3.22 and 3.21.

**CONCLUSIONS**

- 1) There was a significant difference between weight training exercise group, bending exercise group and control group on selected criterion variables such as wrist flexion, wrist extension and hip flexion.
- 2) There was no significant improvement on wrist extension after undergone the weight training exercise and bending series exercise.

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