



## EFFECT OF ASANAS AND PRANAYAMA ON ANXIETY LEVEL OF SCHOOL GOING CHILDREN

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### ABSTRACT

*The purpose of the study was to determine the effect of Asanas and Pranayama on Anxiety level of school going children. 120 subjects were equally assigned to the four groups by using random sampling procedure i.e. three experimental groups and one control group. The experimental Group A was administered Asanas, Group B was administered Pranayama and Group C was administered combination of Asana Pranayama and Group D control group was given no training of an experimental period of twelve weeks. Analysis of covariance was used exclusively to compare the effect of three yogic experimental treatments programme for school going children. After statistical analysis findings show significant effect of all three experimental groups.*

**Key words:** Asana, Pranayama, and Anxiety.

### Introduction

Yoga is the science of right living and, as such, is intended to be incorporated in daily life. It works on all aspects of the person: the physical, vital, mental, emotional, psychic and spiritual. The world yoga means 'unity' or 'oneness' and is derived from the Sanskrit word Yuj which means 'to join'. This unity or joining is described in spiritual terms as the union of the individual consciousness with the universal consciousness. On a more practical level, yoga is a means of balancing and harmonizing the body, mind and emotions. This is done through the practice of Asana, Pranayama, Mudra, Bandha, Shatkarma and Meditation, and must be achieved before union can take place with the higher reality. The application of yogic techniques is considered beneficial for health and cure of certain disease for Anxiety management and for improving general efficiency of individual in different fields, yoga is being utilized from the most fundamentally personal to the social and educational implication of the society as a whole. No matter how times and life styles change the judgment of the ancient sages in matters relating to life and conduct is still relevant. Even though our attitude to the nature of yoga itself may be different from those who were in the past. In its evolution, its wisdom applies. It is also a spiritual pursuit for many seekers of truth. In the modern world, western countries like America use yoga as a tool for mental, physical and spiritual upliftment.

## **Objectives of the Study**

- To study the effect of Asanas on Anxiety level of school going children.
- To study the effect of Pranayama on Anxiety level of school going children.
- To study the combination effect of Asana Pranayama on Anxiety level of school going children.
- To compare the effect of Asanas and Pranayama and their combination on Anxiety level of school going children.
- To compare the three treatments and its effect on the Anxiety level.

## **Hypotheses**

- H1** There will be significant effect of Asanas Practice on **Anxiety level** of school going children.
- H2** There will be significant effect of Pranayama Practice on **Anxiety level** of school going children.
- H3** There will be significant effect of Asana Pranayama Practice on **Anxiety level** of school going children.
- H4** There will not be any significant difference between three treatment groups.

## **Selection of subjects**

One hundred twenty (120) school going boys were selected randomly as subjects in the age group of 8-10 years from Muni International School, A-2/16-18, Mohan Garden, Uttam Nagar New Delhi-110059, India. The subjects were divided into three treatment groups and one control group using random method. Group A was allotted Asanas treatment group consisted of 30 subjects, Group B was allotted Pranayama treatment group consisted of 30 subjects, Group C was allotted combination of Asana Pranayama treatment group consisted of 30 subjects and Group D control group consisted of 30 subjects. The study was confined to 12 weeks of training programme .

## **Experimental Protocol**

A period of twelve weeks training programme. Experimental population of 90 subjects were assembled in Activity Hall at Muni International School, A-2/16-18, Mohan Garden, Uttam Nagar, New Delhi-110059, India. Experimental training was executed from 9:00 AM onwards for 45 minutes, for six days a week and Sunday has been observed as weekly off. Each subject of the experimental group was ready to learn Asanas and Pranayamas. Group 'A' acts as Asanas Group, 'B' acts as Pranayama group, Group 'C' acts as Combination of Asana and Pranayama group and Group 'D' acts as control group which did not participate in the training programme. The subjects of experimental group 'A' practiced Asana (Surya Namaskar, Sarvangasana, Matsyasana, Halasana, Bhujangasana, Shalvhasana, Dhanurasana, Chakrasana, ArdhaMatsyendrasana, Paschimottanasana, Vajrasana, Yogamudra, Standing katichakrasana, Tadasana and Shavasana) and group 'B' practiced Pranayama (Anuloma Vilom and Bhastrika) and group 'C' practiced combination of Asana and Pranayama (Surya Namaskar, Sarvangasana,

Matsyasana, Halasana, Bhujangasana, Shalvhasana, Dhanurasana, Chakrasana, ArdhaMatsyendrasana, Paschimottanasana, Vajrasana, Yogamudra, Standing katichakrasana, Tadasana, Shavasana, Anuloma Vilompranayama and Bhastrika pranayama).

**Tool Used**

The Anxiety scores of the subjects were obtained by using General Anxiety Scale for Children (GASC) by Dr. Anil Kumar.

**Results**

**TABLE-1  
DESCRIPTIVE STATISTICS OF THE DATA MEASURED IN THE POST TESTING ANXIETY**

TREATMENT GROUP	MEAN	STD. DEVIATION	N
Asanas Group	18.53	6.65	30
PranayamaGroup	16.10	5.52	30
AsanaPranayamaGroup	14.10	5.22	30
ControlGroup	23.40	8.01	30
Total	18.03	7.25	120

Table no.1 indicates the values of descriptive statistics of the experimental Groups (Asanas Group,PranayamaGroup,Asana PranayamaGroup) & Control Group for psychological variable of anxiety, which shows that the mean and S.D. values of Asanas Group, Pranayama Group, Asana PranayamaGroup and the Control Group were found to be 18.53±6.65, 16.10±5.52, 14.10 ±5.22 and 23.40±8.01 respectively. Total the same was 18.03±7.25.

**TABLE-2  
DESCRIPTIVE STATISTICS OF THE DATA MEASURED IN THE POST- TESTING AFTER ADJUSTMENT WITH THE INITIAL DIFFERENCE ANXIETY**

TREATMENT GROUP	MEAN	STD. ERROR	95% CONFIDENCE INTERVAL	
			LOWER BOUND	UPPER BOUND
Asanas Group	19.01 <sup>a</sup>	0.46	18.09	19.93
PranayamaGroup	15.84 <sup>a</sup>	0.46	14.92	16.76
Asana PranayamaGroup	13.77 <sup>a</sup>	0.46	12.85	14.69
ControlGroup	23.50 <sup>a</sup>	0.46	22.58	24.42

(a) Covariates appearing in the model are evaluated at the following values: general anxiety scale for children pre test = 23.46.

The mean and standard error of different post-testing Groups after adjustment have been shown in table 2. Which is for Asanas Group 19.01 & 0.46, PranayamaGroup 15.84 & 0.46, Asana PranayamaGroup 13.77 & 0.46 and Control Group 23.50 & 0.46.

**TABLE-3**  
**ANCOVA TABLE FOR THE POST-TEST DATA ON ANXIETY**

SOURCE	SUM OF SQUARES	DF	MEAN SQUARE	F	SIG. (p-value)
PreGeneral Anxiety Scale For Children	3912.33	1	3912.33	603.62	0.00
Treatment Group	1612.18	3	537.39	82.91	0.00
Error	745.35	115	6.48		
Corrected Total	6269.86	119			

Table no. 3 indicates the values test of difference between the subject effects, which shows that there was a significant difference in pre test values of psychological variable of anxiety for the four selected Groups, as the value was found to be 603.62, which proves to be the base of Analysis of Co-Variance. Also, a significant difference was found between the post test values of the experimental and ControlGroup as the value was found to be 82.91, which was significant at 0.05 level.

**TABLE-4**  
**POST HOC COMPARISON FOR THE GROUP MEANS IN POST-MEASUREMENT ADJUSTED WITH THE INITIAL DIFFERENCES ANXIETY**

(I) TREATMENT GROUP	(J) TREATMENT GROUP	MEAN DIFFERENCE (I-J)	SIG. <sup>a</sup> (p-value)
Asanas Group	Pranayama Group	3.16*	0.00
	Asana Pranayama Group	5.24*	0.00
	Control Group	-4.48*	0.00
Pranayama Group	Asanas Group	-3.16*	0.00
	Asana Pranayama Group	2.07*	0.002
	Control Group	-7.65*	0.00
Asana Pranayama Group	Asanas Group	-5.24*	0.00
	Pranayama Group	-2.07*	0.002
	Control Group	-9.73*	0.00
Control Group	Asanas Group	4.48*	0.00
	Pranayama Group	7.65*	0.00
	Asana Pranayama Group	9.73*	0.00

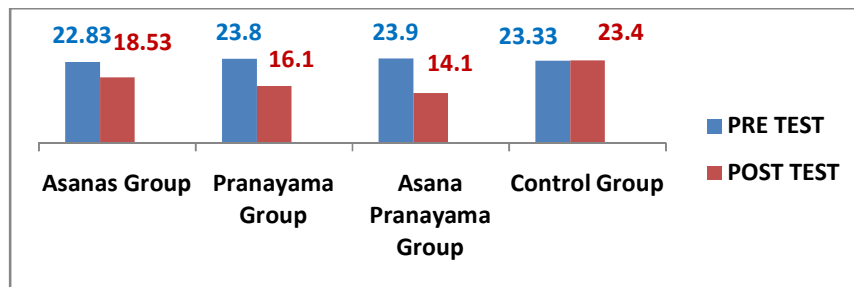
Based on estimated marginal means

a. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

\* The mean difference is significant at the 0.05 level.

Table no. 4 indicates the values of post hoc test for the selected Groups for psychological variable of anxiety, which shows that a significant difference was found between the post test values of Asanas Group and the ControlGroup as the value was found to be 4.48 which was significant at 0.05 level, the post test values of PranayamaGroup and the ControlGroup as the value was found to be 7.65 which was significant at 0.05 level, Asana PranayamaGroup and the ControlGroup as the value was found to be 9.73 which was significant at 0.05 level, also a significant difference was found between the post test values of Asanas Group and PranayamaGroup as the value was found to be 3.16, which was significant at 0.05 level and a significant difference was found between the post test values of Asanas Group and Asana PranayamaGroup as the value was found to be 5.24, which was significant at 0.05 level, a significant difference was found between the post test values of Pranayama Group and Asana PranayamaGroup as the value was found to be 2.07, which was significant at 0.05 level.

FIGURE:-1



COMPARISON OF THE MEANS ON ANXIETY OF THE CONTROL GROUP AND THREE EXPERIMENTAL GROUPS

### **INTERPRETATION OF FINDINGS**

The values of the means and standard deviations for the data on anxiety in the different Groups during the post testing is shown in the table 1. Further, adjusted means and standard deviation for the data on anxiety of different Groups during post testing have been shown in table 2. Readers may note that these values are different from that of the unadjusted values shown in table 1. The advantage of using the ANCOVA is that the differences in the post-testing means are compensated for the initial difference in the scores. In other words, it may be said that the effect of covariate is eliminated in comparing the effectiveness of the treatment Groups during post-test. Table 3 shows the F –value for comparing the adjusted means of the four treatment Groups (Asanas Group, Pranayama Group, Asana Pranayama Group and Control Group) during post-testing . Since p-value for the F- statistic is 0.00 which is less than 0.05, so of it is significant. Thus, the null hypothesis of no difference among the adjusted post-means for the data on anxiety in four treatment Groups may be rejected at 5% level. Since F-statistic is significant, post hoc comparison has been made for the adjusted means of the four treatment Groups which is shown in table 4. It may be noted here that p-value for the mean difference between Asanas Group and Control Group is 0.00, Pranayama Group and Control Group is 0.00, Asana Pranayama Group and Control Group is 0.00, Asanas Group and Pranayama Group is 0.00, Asanas Group and Asana Pranayama Group is 0.000 and Pranayama Group and Asana Pranayama Group is 0.002 all these p-values are less than 0.05 and hence they are significant at 5% level. Thus, the following conclusions can be drawn:

- There is a significant difference between the adjusted means of the Asanas Group and Control Group on the data of psychological variable anxiety during post-test.
- There is a significant difference between the adjusted means of the Pranayama Group and Control Group on the data of psychological variable anxiety during post-test.
- There is a significant difference between the adjusted means of the Asana Pranayama Group and Control Group on the data of psychological variable anxiety during post-test.
- There is a significant difference between the adjusted means of the Asanas Group and Pranayama Group on the data of psychological variable anxiety during post-test.
- There is a significant difference between the adjusted means of the Asanas Group and Asana Pranayama Group on the data of psychological variable anxiety during post-test.
- There is a significant difference between the adjusted means of the Pranayama Group and Asana Pranayama Group on the data of psychological variable anxiety during post-test.

In order to find as to which treatment is best, one can see the adjusted means values of different treatment Groups during post-testing given in table 2. Clubbing these adjusted means with the six conclusions mentioned above. Hence, it may be inferred that Asanas, Pranayama and Asana Pranayama are equally effective in decreasing the anxiety among the subjects in comparison to that of the Control Group. To Control anxiety all the treatments proved to be effective as among all the Groups after treatment anxiety has shown downwards trends but Asana Pranayama together was most effective as difference between pre and post test was 9.8 for experimental Group which induces Pranayama difference between pre and post test was 7.7 in case of experimental Group which was under gone Asanas training was less effective. Still difference between pre and post test was 4.3. Which can be seen clearly in graphical representation that is figure-1.

### **Discussion**

Table 3 was referred back into the result section. It could be seen from the table that there was a significant difference in case of anxiety after administering the different training programme namely Asana, Pranayama and combination of Asana Pranayama. The post hoc test (Table 4) revealed that anxiety was significantly improved in Asana Pranayama among the three experimental programme followed by Pranayama programme and Asanas programme Groups. The effectiveness of combination of Asana Pranayama programme in comparison to other training programme may be due to the reason that both Asana Pranayama programme decrease the level of anxiety of individuals. Therefore, proposed hypothesis has been accepted in case of anxiety.

### **Conclusions**

Asanas, Pranayama and combination of Asana Pranayama also decrease the Anxiety of school going children.

### **Recommendations**

It will be appreciated if following studies may be executed in future for upliftment of human beings like

- ❖ Sportsmen from different games and sports.
- ❖ Boys of different age groups (Childhood, College going).
- ❖ Girls of different groups (Childhood, Adolescent & College going).
- ❖ Working and non working males and females from different work of life's.
- ❖ Senior Citizens male and female .
- ❖ It is further noted that the same research maybe conducted on larger population of different age groups and genders.

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