

## **EFFECT OF YOGA ON ANXIETY IN COLLEGE STUDENT**

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### **ABSTRACT :**

**Background:** Stress is often experienced by students in their academic life. The reason is they face a various demanding situation, including academic performance, adjustment to college life, financial concerns, family problems. Various forms of yoga-based techniques have proven their efficacy to reduce the stress and improve mental health.

**Objectives:** The intent of the study was to investigate the effect of a short-term comprehensive yoga program including Suryanamaskar, Asana, Pranayama, and relaxation on anxiety level in college student.

**Materials and Methods:** A total number of 60 B. Ed college students (22 male and 38 female) with the age of  $24.07 \pm 4.52$  years participated for study. It was two group pre-post design. The Yoga group practiced a one-hour yoga session for fifteen days and the control group was in normal daily activity. The outcome measures were anxiety score, taken on the first and last day of the course.

**Results:** At the end of the course, trait anxiety scores were significantly lower ( $p=0.0001$ ) than at the beginning in the Yoga group. But there was no significant change in the trait anxiety scores of the controls ( $p=0.78$ ) after an interval of fifteen days. There was a greater reduction ( $p=0.0001$ ) in the Yoga group than the control group.

**Conclusions:** The observation suggests that short-term Yoga program seems to have a significant positive effect on trait anxiety. It could be used as an important technique to reduce stress and increase the performance of college student.

**Keywords:** Yoga, Anxiety, College Students etc.

### **Introduction:**

Anxiety, a common general mental health problem is increasing in among the college students (Zivin et al., 2009). Students experience it, as they face a various demanding situation, including academic performance, adjustment to college life, financial concerns, family problems, as well as the underlying psychological issues of the individual (Van Berkel and Reeves, 2017). Among them, academic performance is one of the major natural demands where for brilliant student it facilitates academic performance but same demands for low intellectual

ability earned poor grades in college irrespective of their achieve targets while anxious students in the middle range of ability obtained lower grades and a higher percentage of academic failures than non-anxious students of similar ability (Hunt and Mental, 2009). As a result, mental disorders among college students appear to be increasing in number and its severity also (Zivin et al., 2009, Eisenberg, 2007). The college years represent a developmentally challenging transition to adulthood and untreated mental illness may bring significant implications in productivity, substance use and social relationships (Hunt and Mental, 2009). It is stated that a relatively large proportion of students with mental health problems that are more than short-term issues related to adjustments or other temporary factors (Zivin et al., 2009). A study has defined impulsivity as one of the concerned risk factors to develop a number of disorders, including alcoholism, eating disorders, and pathological gambling (Eisenberg, 2007). Furthermore, anxiety and cognitive performance are closely linked in all individual. There is an inversely proportional association between anxiety levels and performance in memory task (Bierman, 2005), selective attention and executive function (Eysenck, 2007).

Anxiety disorders are a group of disorder that experience often in life. Studies have reported the prevalence of generalized anxiety disorder (GAD) among adults in the community is 1.5–3.0%. It has also stated that 3–5% of adults have had GAD in the past year and 4–7% have had GAD during their life (Gale C, Oakley-Browne M, 2004). Social phobia is found to be a common anxiety disorder with prevalence sometimes as high as 10%. The other anxiety disorder has less prevalence as for example generalized anxiety disorder (3–5%), Obsessive-compulsive disorder (2–3%) (7). The US National Comorbidity Survey found that people diagnosed with GAD had a comorbid diagnosis, including mild depression (22%), depression (39–69%), somatization, other anxiety disorders, bipolar disorder, or substance abuse (Eisenberg, 2007).

Yoga is one of the most widely used complementary and alternative therapies to manage disturbance at a physical level, a psychological level which enhances the quality of life and helps to face the demanding situation much more relax and efficient way (Abraham, 2015). Various forms of yoga, including Asana (yogic posture) Pranayama (Breathing exercise) and Meditation, have proven their efficacy to improve concentration, memory by reducing stress (Tsunaka M, Chan, 2011), which helped to achieve a good academic score in the student. Yoga has also proven increasing performance efficacy, productivity in the individual applicable area (Chong, Tsunaka and Chan, 2011). Receiving the various level of benefits offered by yoga, the mechanism behind

is that Yoga balance the autonomic nervous system through the hypothalamic-pituitary and adrenal pathway (Tsunaka M, Chan, 2011). People are various condition practicing Yoga as stress management tool in reducing stress, anxiety, depression and improving health (Bierman, 2005, Abraham, 2015, Maharana, 2013, Sharma, 2014). Prior studies have also reported a significant reduction in the scores of trait anxiety following yoga-based lifestyle program like yogic posture and breathing exercises (Gupta, 2006) as the relaxation techniques and in state anxiety following muscle relaxation techniques and listening to music (Zhou, 2015).

As various benefits, yoga is becoming a good instrument to keep a person physically, mentally and psychologically fit. So the aim of the study was to evaluate the effectiveness of short-term yoga in reducing stress levels among stress challenging college student.

## Material and methods:

### Participants

The subjects for the present study were selected from the students of B.ED Education, in Kolkata. A total number of sixty students were involved with the age range of 20 to 29 years and the average age was  $24.07 \pm 4.52$  years. The number of the male was 22 and the female was 38. The subjects have explained the details of the intervention such as the way it is to be performed and its effects on the body and mind. Later a verbal consent was obtained from them.

**Table I:** The demographic data of the Yoga and Control group.

SL No	Group	Gender	Age (Mean $\pm$ SD)
1	Yoga	Male =12	$24.67 \pm 2.4$ (Years)
		Female =18	$24.83 \pm 1.93$ (Years)
		Total =30	$24.07 \pm 4.52$ (Years)
2	Control	Male =10	$26.2 \pm 2.53$ (Years)
		Female =20	$24.85 \pm 2.03$ (Years)
		Total =30	$24.60 \pm 4.65$ (Years)

### Study design:

It was two groups pre-post design. The 60 students were divided into two groups. One group served as a Yoga group who practiced yoga for 15 days and others as control was in normal daily activity. Yoga group was given a respective set of yoga practice (mentioned in table II) for 1 hour of intervention per day for 15 days. Control group was informed not to do any yoga or physical exercises for fifteen days.

### **Intervention:**

**Table II:** The set of asanas and pranayamas included in the course

- I. Suryanamaskara (Sun Salutation)
- II. Quick Relaxation in Shavasana (Corpsepose)
- III. Asana (Yogic pose)
  - a) STANDING
    - 1) Ardhakatichakrasana(Lateral arc pose)
    - 2) Ardhashandrasana (Half moon pose)
    - 3) Virabhadrasana
    - 4).Utkatasana (Chair Pose)
    - 5).Vriksasana (Tree Pose)
  - b) SITTING
    - 1) Ustrasana (Camel Pose)
    - 2) Sasankasana (Rabbit Pose)
    - 3) Ardhamatshendrasana (Half- spinal twist Pose)
    - 4) Bhadrasana (Gracious Pose)
    - 5) Padmasana (Lotus Pose)
  - c) SUPINE
    - 1) Sethubandhasana (Bridge Pose)
    - 2) Pabanmuktasana (Anti Flatus posture)
    - 3) Markatasana (Monkey yoga pose)
- IV. Deep Relaxation Technique in Shavasana (Corpsepose)
- V. Pranayama (Yogic Breathing)
  - 1) Vibhagio Pranayama (Sectional breathing)
  - 2) KapalBhatiKriya (Frontal lobe cleansing breathing)
  - 3) Anulomevilome Pranayama (Alternate nostril breathing)

- 4) Bhamari Pranayama (Humming sound breathing)
- 5) A, U, M & OM Chanting (Devine sound)

**Assessment:**

For the present study, the instrument was taken as a tool is called the Spielberger State-Trait Anxiety Inventory (STAI). It has two divisions. One part assesses how a person fell anxiety at present movement or right now which is called State Anxiety inventory scale (STAI). Another part assesses how a person feel anxiety in general which is called Trait Anxiety inventory scale (TAIS). In this study, subjects were assessed by STAI questionnaire. It measures through four scales: one (not at all), two (somewhat), three (moderately so), and four (very much so). There were no right or wrong answers. They were not given spend too much time on any one statement but give the answer which seems to describe their present feelings best. A rating of four indicates the presence of a high-level anxiety and one indicates the absence of a high-level anxiety. The range of scores is from 20-80, the higher the score indicating greater anxiety (Spielberger, 1983).

**RESULT:**

The levels of anxiety measured at the beginning (day 1) and end (day 15) for the Yoga group and for controls. Analyses were performed using r statistical package version 3.22. Descriptive statistics (mean, standard deviation) were calculated and scatter plots were examined visually to find out outliers potentially caused by data entry or other errors. Normal distribution of variables was confirmed through visual analysis of histograms and the Kolmogorov-Smirnov Z statistic for baseline data. The use of parametric statistical tests was justified as no significant difference was found between a normal distribution and distribution of variables was with a probability of the Z statistic more than 0.05. The pre and post score were compared using a 2-tailed t-test, with significance set at  $\alpha=0.05$ . Within-group paired sample t-test and between group independent sample t-test were done. At the end of the course, trait anxiety scores were significantly lower ( $p=0.0001$ ) than at the beginning in the Yoga group. But there was no significant change in the trait anxiety scores of the controls ( $p=0.78$ ) after an interval of fifteen days. There was a greater reduction ( $p=0.0001$ ) in the Yoga group than the control group (Table III).

**Table III:** Mean Anxiety levels at the beginning and end of the course

Variable	Yoga group		't' value	Control group		't' value	Between-Group 't' value
	Day 1	Day 15		Day 1	Day 15		
STAI	50.03±8.47	42.96±7.85	4.46***	44.06±9.07	43.9±9.65	0.28	4.07***

\*\*\*= $p < 0.0001$

## **DISCUSSION:**

Both the anxiety and stress have an adverse effect on college student amongst others. This, in turn, leads to affect their academic career adversely. Besides this, it also has a negative effect on their day to day performance and personal health. Yogic practices combined with Asana, Pranayama, and Relaxation are very good techniques to reduce the stress levels thus helping them out to overcome anxiety. In the environment, many studies have been conducted which proved that yogic practices reduce stress levels and anxiety to a larger extent.

The present study was conducted on 60 college students (both male and female) of a BEd college. A pre-test was conducted on all the 60 subjects, among them, 30 were in the Yoga group (YG) and 30 were in the control group (CG), using STAI II. A set of yogic techniques, combined with Aasna, Pranayama, and Relaxation were the intervention given to 30 subjects of the YG for one hour for 15 days. After 15 days of intervention, a post-test was conducted for both groups using the above-mentioned variable. The result showed a significant difference in trait anxiety scores in YG than CG.

Psychological stress begins with the risk factor for many diseases, one of the approaches to address the problem is the various form of Yoga. Studies have shown the efficacy of Yogic posture, Breathing practices and Meditation individually (Michalsen, 2017) and also combination of all reduce stress (Chong, 2017) and improve psychological and physical health (Gupta et al., 2006 and Zivin 2009). It is also a consideration that intensity of intervention with a time period. The present study's yoga module was a combination of all (Sun salutation, Yogic Posture, Breathing practice, Deep relaxation with Om chanting), with that perhaps brought within a short period of time significantly improved.

A previous study showed that Integrated approach of Yoga therapy on pregnancy reduce Trait (STAI II) anxiety score 8.97% (Maharana, 2013). This study also has shown 15 days of yoga on B.Ed student anxiety reduced -14.12%. Similarly, in another study, the experimental group practiced weekly twice of 90 min duration for two months means a total number of 16 sessions. The experimental group was compared with the control group and the result showed women who participated in yoga classes significantly decrease their state anxiety. In another study, where intervention consisted of all aspect of yoga along with knowledge about the illness, for a period

of 10 days program and subjects were in hypertension, coronary artery disease, obesity, cervical spondylosis, and psychological disorder condition. The observations suggested that in various disease condition a short lifestyle modification and stress management leads to a remarkable reduction in the anxiety scores within a period of 10 days (Gupta et al., 2006).

Even not only in ill condition, other situation where situations bring stress and yogic component address very effectively to face the situation by reducing stress. That reflects, in another study where subjects were not in any medical and psychiatric illness but they faced high levels of stress and anxiety during training. They were a medical student and divided into two groups. One hour thrice a week for a period of three-month session showed a significant reduction in Anxiety in yoga group compared to control before exam even after exam though anxiety score was less than prior exam (Malathi A, Damodaran, 1999). Our study showed a similar result in spite of disease condition, it also showed the effect of yoga on students who probably face stress full condition.

In our study, in base line reading Yoga group showed increased in state anxiety than control group as shown on the STAI. It happened maybe the randomization was not done properly.

#### **CONCLUSION:**

A certain level of stress may bring a positive outcome to improve students' academic performance and competitiveness but intensified stress can adversely affect physical and mental health. Yoga with physical, emotional, mental, personality development and holistic understanding offers to cope with stressful states. The aspect of relaxation and detachment is lacking in our education process and it is this new dimension that needs to be added to the curriculum. Our observations suggest that Yoga program can be beneficial in achieving a stable state of mind during routine activities, to reduce anxiety and improve the performance of college student.

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**Informed consent:**

The subjects have explained the details of the intervention such as the way it is to be performed and its effects on the body and mind. Later a verbal consent was obtained from them.