



## Original Research Article

## Role of Yoga in relieving anxiety in MBBS Students

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## ABSTRACT

**Introduction:** Stress is nothing but gap between expectation and reality. Among different ways, one of the best ways of stress management programme is practicing Yoga. Yoga can achieve optimum functioning of not only body but also mind. With this, the present study was planned to evaluate effect of Yoga training on anxiety levels in medical students.

**Materials and Methods:** The present study was carried out in the department of Physiology, ARMCH & RC, Kumbhari and conducted on 50 MBBS students of age group 17-20 years, who participated voluntarily and actively after meeting inclusion & exclusion criteria. All students were given GAD-7 (Generalized Anxiety Disorder-7) and Beck's anxiety questionnaire for before and after yoga training.

**Result:** For GAD score, there was highly reduction in anxiety score of  $6.20 \pm 2.86$  after giving yoga training as compared to before score i.e.  $7.46 \pm 3.14$  ( $p < 0.0001$ ), whereas for Beck's score, there was highly reduction in anxiety score of  $20.74 \pm 0.72$  after giving yoga training as compared to before score i.e.  $26.84 \pm 1.84$  ( $p < 0.0001$ ).

**Conclusion:** In conclusion, yoga offers comprehensive solutions for reducing anxiety levels & improvising subjective feeling of well being and managing health as a whole. It can lead to reduction of stress levels and thereby preventing autonomic dysregulation.

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## 1. Introduction

Stress is a state of mental or emotional brain resulting from adverse demanding circumstances. Stress is challenging condition which results in perturbation of body's homeostasis. It disturbs one's physical and mental state of equilibrium causing anxiety and other mental turbulences that might evolve into chronic conditions like HTN, bronchial asthma, DM, CHD if left untreated.<sup>1,2</sup> Stress accelerates the nervous system, overburdens the adrenal glands and lowers immunity.<sup>3,4</sup>

Stress is nothing but gap between expectation and reality. In this 22nd century of competition, stress has been reported higher & higher for students in health care courses like medical, dental. Previous studies on medical students have shown that stress induced disorders are higher in medical students than in other age-controlled students.<sup>5</sup> As medical

students of today are the physicians of tomorrow, they must be aware of different ways to combat stress that aims to integrate harmonious development of all potentialities. Among different ways, one of the best ways of stress management programme is practicing Yoga.

Yoga is ancient culture of Indian heritage practiced for over 5000 years that deals with man holistically for integrating mind & body into harmony. Yoga can achieve optimum functioning of not only body but also mind. It has only newly gained popularity worldwide.<sup>6</sup> Yoga when practiced regularly bestows physical, mental, intellectual & spiritual health for it incorporates postures, breathing techniques, and meditation.<sup>7-9</sup> Yogic practices have been found to be most useful in alleviating stress induced disorders such as anxiety, depression, and number of psychiatric and psychosomatic disorders.<sup>10</sup> With keeping in mind above facts, the present study is intended to evaluate effect of Yoga training on anxiety levels in medical students.

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## 2. Materials and Methods

The present study was carried out in the department of Physiology, ARMCH & RC, Kumbhari and conducted on 50 MBBS students of age group 17-20 years, who participated voluntarily and actively after meeting inclusion & exclusion criteria.

### 2.1. Inclusion criteria

1. Students aged between 18 to 25 yr of either gender
2. Student who have not practiced yoga in past 1 yr.

### 2.2. Exclusion criteria

1. Students who practiced yoga in past 1 yr
2. Students with history of previous or current organic diseases.

### 2.3. Data collection procedure

Institutional ethical committee clearance was obtained. Also informed consent was obtained from all the participants. The purpose of study was explained to all students. All students were given GAD-7 (Generalized Anxiety Disorder-7)<sup>11</sup> and Beck's anxiety questionnaire<sup>12</sup> for before and after yoga training. They were asked to answer openly and were explained about confidentiality. The students were informed about the programme, made comfortable and given orientation for initial two days. Yoga training was given to all students by trained Yoga teacher one hour per day for 12 weeks except Sunday. Yogic exercises practiced were:

1. Prayer
2. Asanas: Surya namaskar, Padmasana Dhanurasana, Vajrasana, Bhujangasana, Halasana, Pawanmuktasana, Vrishasana, Padahasthasana, Trikonasana, Paschimotanasana and Shavasana.
3. Breathing exercises: Nadishuddhi, Kapalbhathi, Anulom-Vilom, Bhramari, Bhastrika

### 2.4. General anxiety disorder

7 questionnaire designed to assess individual general anxiety level which contains 7 different questions.

The total score was graded from minimum – 0 to maximum –21.

Categorized into Low (<10), Moderate (11-20) and Severe (>20) anxiety

### 2.5. Beck's anxiety inventory

It contains 22 types of common anxiety symptom questionnaire. It measures current level of anxiety. Total score between 0–21 indicates very low anxiety, 22 – 35 indicates moderate anxiety and above 36 indicates severe anxiety with potential case of concern.

### 2.6. Statistical analysis

Descriptive statistics such as mean, SD and percentage was used to present data. Comparison of scores between before and after yoga was analyzed by using paired t-test. A p-value less than 0.05 were considered as significant.

## 3. Result

There was highly significant statistical difference in anxiety score before & after yoga by both GAD -7 Item scale ( $p < 0.001$ ) and by Beck's anxiety scale ( $p < 0.001$ )

For GAD score, there was highly reduction in anxiety score of  $6.20 \pm 2.86$  after giving yoga training as compared to before score i.e.  $7.46 \pm 3.14$  ( $p < 0.0001$ ).

For Beck's score, there was highly reduction in anxiety score of  $20.74 \pm 0.72$  after giving yoga training as compared to before score i.e.  $26.84 \pm 1.84$  ( $p < 0.0001$ ).

From graph, it was understood that, there was highly significant drop in GAD 7 score & Beck's anxiety score after yoga training, which itself means that the current symptoms of anxiety have shown a drastic reduction.

## 4. Discussion

Present study demonstrates beneficial effect of yoga for reducing and recovering from stress induced anxiety which helps towards contribution to healthy living. Our findings relevant with study done by Malathi et al, on MBBS students found anxiety reduction in the student after examination by Yoga intervention.<sup>13</sup> In another study done by Mullur et al also have similar findings in healthy females.<sup>14</sup> Stress induces imbalance of the autonomic nervous system with decreased activity of the parasympathetic system and preponderance of the sympathetic activity. Autonomic imbalance and shift towards sympathetic system may be the reason of anxiety. Physiology that explains how yoga reduces the anxiety level is as follows:

1. Down-regulation of the hypothalamic-pituitary-adrenal axis and the sympathetic nervous system with a tendency towards parasympathetic nervous system dominance.
2. Decreases plasma phenylalanine and plasma cortisol; raised phenylalanine leads to altered mental activity and also increase in plasma cortisol is an important mediator of stress.<sup>15</sup> It also increases levels of GABA (Gamma amino butyric acid). Low GABA levels are associated with higher anxiety.<sup>16</sup>
3. Hypothalamus interacts with the thalamic nuclei to facilitate specific alpha-wave frequencies in cortex which is considered as underlying mechanism for calmness in yogic persons.
4. The intense concentration and body control involved in breathing exercises help free the mind from mental

**Table 1:** Comparison of GAD score and Beck's score

Scores	Before Yoga training	After Yoga training	t-test	p-value	Significance
GAD-7 anxiety scores	7.46 ± 3.14	6.20 ± 2.86	5.436	<0.0001	Highly significant
Beck's anxiety score	26.84 ± 1.84	20.74 ± 0.72	31.393	<0.0001	Highly significant

distractions, worries, and fatigue. Yoga breathing exercises decreases arousal, relaxes body, oxygenates blood, that reduces anxiety and promotes clear thinking keeping a person focused.<sup>17</sup>

Thus, yoga practices balances all systems of the body lowering down anxiety, reducing depression and improves overall mood. The end result is increased mental clarity, emotional stability and a greater sense of well being.

## 5. Conclusion

In conclusion, yoga offers comprehensive solutions for reducing anxiety levels & improvising subjective feeling of well being and managing health as a whole. It can lead to reduction of stress levels and thereby preventing autonomic dysregulation. Reduction in perceived stress levels results in lesser negative feelings of anxiety and depression, improved sense of well-being. The issue is often neglected both by the vulnerable population of medical students as well as the health-care community itself. Hence, teaching medical students to relate mindfully to current internal and external stimuli, through yoga, can decrease mental distress and increase well-being.

The article definitely brings attention on the need for coping strategies and also puts together various methods for the physical and psychological well being of the doctors-in-making. Yoga is vaccine for prevention of stress. It is drugless therapy for germless disease like stress induced anxiety.

## 6. Source of funding

None.

## 7. Conflict of interest

None.

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