

RESEARCH ARTICLE

Impact of yoga on depression, stress, and anxiety among engineering students

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Abstract

As stress is found in every walk of one's life, it depends on one's perception of external demand made on them and how they perceive it. However, suppose we see in the case of engineering students. In that case, the stress is on the rising side since engineering demands a level of knowledge in science and technology. The path to becoming a successful engineering graduate by setting the desired career path is not that easy. It requires utmost sincerity and dedication, eventually leading to stress, anxiety, depression, in adverse cases suicides, an intervention is needed to reduce the negative impact of stress among engineering students. Keeping that in mind, Yoga's effect has been tested with DASS Scale, where it was found to be effective in reducing.

Keywords: Engineering students, Yoga for stress, student stress

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1. INTRODUCTION

As we come across stress, anxiety, and depression in day-to-day life, it becomes tough for everyone to cope. Even due to changing lifestyles and busy routines, lots of changes have arrived in people's lives. However, if today we see due to the perception of Indians that engineering professional as one of the esteemed professions. This had given rise to mushrooming of engineering across India. Since medical and engineering are considered as one of the most esteemed profession in India. But the path to become an engineer is not too easy often student subjected to cut-throat competition, which, is eventually leading to stress among students in India and causing many negative impacts such anxiety, depression etc, therefore, It is found that stress is bringing issues in the form of physical and mental, which leading to a drained and exhausted condition in life.

Moreover, to cope up with stress, anxiety, and depression, many techniques have arrived today. Despite all of this, the roots and practice of ancient Yoga have remained constant. Yoga is useful for many people to overcome various issues related to their lives. An intervention such as Yoga is needed to counter stress among students, especially among engineering students. In this paper, the positive impacts of Yoga have been measured using DASS-21. Some of Yoga's benefits have been discussed below for managing stress and how today's technology is too supportive in bringing Yoga to colleges via computer internet. Its future impacts have been discussed below.

2. BENEFIT OF YOGA IN MANAGING STRESS

2.1. Yoga in the mind-body-spirit synergy effect

When breathing exercises are done in combination with asana unites the mind, body and soul, imbalance these three usually paves the way to health issues and leads to unwanted stress. Health experts and yoga have certified that yoga is relieving people stress to a great extent.

2.2. Yoga in pace full sleep

Some of the exercises in yoga help us to have improvement in our sleep. Since may of people affected by depression lack a peaceful sleep. Yoga helps people to have more focus in life with regular yoga workout.

2.3. Yoga makes us energetic

In Yoga, breathing exercise is one of the easiest and has greater importance in stress management. The slow breathing process leads to pass oxygen through our organs by making us relaxed..

2.4. Yoga increase concentration

We all experience forgetfulness when we have stress. Hence, Yoga helps us have focused attention and face any situation with a calm and relaxed mind.^[1]

2.5. Yoga and meditation

When yoga is done with meditation it balances the mind to relax and when breathing exercise is done, the heart rate and blood pressure became normal.

2.6. Yoga bringing back inner confidence

Stress Stress usually leads to confusion, and we are not able to make any decision and mostly depend upon others for help. Now by practicing daily Yoga, one can be confident. Yoga will be useful in managing stress by boosting inner confidence.

Finally, we can say that by doing Yoga, one can ultimately come out of stress since stress is part of a day to day life. Still, by practicing Yoga, one can build a positive personality and become a confident person to handle any situation of life.

3.STRESS, ANXIETY, DEPRESSION AND COMPLIMENTARY THERAPY

Since the side effects of conventional therapies have many adverse effects, so most of the people are shifting towards complementary therapy, which was again proven by Wang et al. (2001) that about 53.6% of respondents in Canada with severe depression reported using complementary and alternative medicine.^[2] Jorm et al. (2004) had found that the self-help strategy, including complementary therapies, was very useful in coping with depression, which is mild-moderate psychological distress.^[3] A wide range of therapies are available for countering depression, anxiety, and stress, but people are turning towards complementary therapy to reduce the negative impact of conventional treatment.

4.YOGA AND IT BENEFIT IN COUNTERING STRESS, ANXIETY, DEPRESSION

Yoga has its roots in the Indian culture and originally has a complex spiritual, moral, and physical practice, which helps attain self-awareness. Western Yoga is typically based on Hatha Yoga, which is divided into three parts, the first part is called Asanas (postures), the second one is known as Pranayama and, third one is called as Dayana (meditation). According to (Riley, 2004), controlled breathing helps to focus the mind and achieve relaxation while meditation aims to calm the mind.^[4]

As Yoga is a gift of India to the world, it is secularly used for the therapeutic purpose in clinics worldwide for treating a different type of ailments. A national survey in the US mentioned 7.5% of respondents using Yoga at least once in their lifetime, and 3.8% were used in the past year^[5] Mostly the users were females, college-educated, and urban population interested in healthy living. These groups of people were using Yoga for both well-being as well as for their specific health condition (Saper et al., 2004). However, Khalsa (2004), bibliometric analysis it was found that there is an increase in the publication regarding the clinical application of Yoga and the use of randomized controlled trials. According to Kranner et al. (2010) stress and anxiety either it's going to be a short term or long term, and it's over overwhelming, Associate in Nursing may have a negative impact if they pay an excessive quantity of your time worrying regarding it. Ciesla, Reilly, Dickson, Emanuel, & Updegraff (2012) have found that Yoga within the type of mindfulness-based practices is acknowledged worldwide for relieving stress.^[6] A study by Mendelson et al. (2010) supported the findings of Ciesla et al. (2012).

This study targeted fourth and fifth-grade elementary students from the port space. The researchers studied children's responses to worry, voluntary and involuntary, relationships with peers, positive and negative emotions, and depressive symptoms. 1/2 the kids were willy-nilly placed into the school-based mindfulness and yoga intervention, and therefore another 1/2 partner didn't

receive any intervention. The intervention consisted of youngsters attending a consultation with college directors four days per week, for twelve weeks. Every session lasted forty-five minutes and was conducted throughout a non-academic resource time. Primarily, they studied the result of a mindfulness-based program on psychological features and emotional regulation with the elementary students. Once the youth were introduced to a heedfulness program besides Yoga, the program had a positive impact on intrusive thoughts and arousal within the students. The results of this study showed students within the intervention had positive changes in self-regulatory capacities that area unit correlate to heart-rate reactivity. It additionally lowered intrusive thoughts, arousal, and impulsive actions. These findings recommend implementing mindfulness-based approaches, and Yoga helps in combating the negative effects of stress in children.^[7]

5.OBJECTIVE OF THE STUDY

1. To identify the level of stress, anxiety and depression among student.
2. To examine the positive impact of yoga on stress, anxiety and depression among student and feasible of yoga via computer internet in India.
3. To formulate effective strategies to avoid stress among students.

6.RESEARCH METHODOLOGY

Methods of Research:

The method followed for this research was Exploratory and Experimental.

Sample frame:

IIT Roorkee student's enrolment list

Method of sampling:

Pre-test post-test non-probability- convenience sampling method

Sample size:

40 (Students who previously not did yoga practice)

7.Data analysis

Data were analyzed using quickcalls online software available on the GraphPad website, and an unpaired t-test has been done.

8.Procedure followed for the study

The DASS 21 method has been used for identifying the impact of Yoga on stress, anxiety, and depression that contains 21 questions, which are self-administered to measure the severity of stress, anxiety, and depression. An Experimental study was conducted in two-stage at the first stage; the self-administered 21 questions were administered to find the degree of severity in terms of stress, anxiety, and depression among students, and in the second stage, Yoga has been administered in three weeks for a total period of 21 days in, which, each week the impact of the Yoga has been measured and finally the score was calculated to know the real effect of Yoga on stress, anxiety, and depression among students..

9.Reason for using DASS-21

DASS-21 has been utilized in differing kinds of analysis since its publication in 1995, ranging from youth stress and adult emotional encounter; lower back pain patients, drawback gambling, work commitment, and even spinal cord injury (e.g., Raylu & Oei, 2004). Even DASS-21 has been valid in various populations, such as Hispanic, yank, and British adults (e.g., Crawford et al., 2009; Norton, 2007). The results show that DASS-21 could be a sound (psychometrically) instrument for measuring the strain, anxiety, and depression with sensible dependability and validity that created these instruments as an appropriate tool for our study..

10.Data analysis and interpretation

T-test and p-values are calculated using quick calls online software available on the GraphPad website.

Unpaired t test results

Table-1

Source: primary

Group	Pre-Depression	Post-Depression
Mean	4.78	3.78
SD	4.82	3.70
SEM	0.76	0.58
N	40	40

Source: primary

11.Confidence interval:

The mean of Pre-Depression minus Post-Depression equals 1.00

95% confidence interval of this difference: From -0.91 to 2.91

Intermediate values used in calculations:

$t = 1.0416$

$df = 78$

standard error of difference = 0.960

P value and statistical significance:

The two-tailed P value equals 0.3008

By conventional criteria; this difference is considered to be not statistically significant.

Unpaired t-test results

Table-2

Source: primary

Group	Pre-anxiety	Post-anxiety
Mean	6.23	4.73
SD	4.60	2.89
SEM	0.73	0.46
N	40	40

Source: primary

Confidence interval:

The mean of Pre-anxiety minus Post-anxiety equals 1.50
95% confidence interval of this difference: From -0.21 to 3.21

Intermediate values used in calculations:

$t = 1.7463$

$df = 78$

Standard error of difference = 0.859

P value and statistical significance:

The two-tailed P value equals 0.0847

By conventional criteria, this difference is considered to be not quite statistically significant.

Unpaired t test results

Table-3

Group	Pre-Stress	Post-stress
Mean	5.20	3.35
SD	3.96	2.39
SEM	0.63	0.38
N	40	40

Source: Primary

Confidence interval

The mean of Pre-stress minus Post-stress equals 1.85
95% confidence interval of this difference: From 0.39 to 3.31

Intermediate values used in calculations

$t = 2.5309$

$df = 78$

Standard error of difference = 0.731

P value and statistical significance

The two-tailed P value equals 0.0134

By conventional criteria, this difference is considered to be statistically significant. If we see from the analysed data it is clear that yoga has no impact on reducing depression, whereas, it has a mild impact on reducing anxiety. However, it has a strong influence on reducing stress among student.

CONCLUSION

The raw data were processed. We tried to determine the impact of Yoga in three different conditions faced by engineering students such as depression, anxiety, and stress by going for an unpaired t-test with pre-test and post-test for the respective state. Therefore, it is found that Yoga has no impact on depression, whereas it had a mildly positive effect on anxiety and had a high positive impact on managing stress; therefore, Yoga is found to be useful in managing stress, or we can say it had a high positive impact in stress management. However, while measuring depression scores, we found a slight decline, but there is a need to measure the effect of Yoga on depression on a longer-term duration. Stress and anxiety among engineering can be countered at the initial stage by the help of the Yoga via institute computer internet or by offline classes to avoid

its negative adverse impact such as depression, anxiety and in extreme cases suicides can be avoided in the long run if yoga intervention is made successful in engineering colleges.

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