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Rohit

Assistance Professor, Dept. of
Physical Education, AIJHM
College, Rohtak, Haryana, India

A research on various consequence of yoga practice on stress and heart rate variability

Rohit

Abstract

The study aims at finding out the effect of Yoga exercise on stress and anxiety on college going students. The result shows a significant change in the practice group as Yoga exercise positively decreased the stress level of the male and female subjects. Several other studies prove Yoga exercise equally influences anxiety level significantly in both male and female subjects.

Keywords: Yoga exercise, Stress, Anxiety

Introduction

Stress (roughly the opposite of relaxation) is a medical term for a wide range of strong external stimuli, both physiological and psychological, which can cause a physiological response called the general adaptation syndrome [1]. It can be understood as tension (psychology) a state of mental or emotional strain or suspense. Today, life style such as cigarette smoking, habitual hostility, and suspiciousness towards others, a diet high in fat and low in fiber, and a sedentary way of life leads to many psychological problems and psychosomatic problems.

Stress and anxiety have become major killers in our developed world, particularly the youth, the college going students are loosing their confidence and getting the academic stress. A disturbing trend in college student health is reported the increase in student stress nationwide. Good mental health is one of the greatest resources for vitality, creativity and wealth, while poor health in contrast significantly drains. When stress is perceived negatively or becomes excessive, students experience physical and psychological impairment. Hence, it is necessary for the students of higher education to induce a complete relaxation technique, through which they can prevent themselves from a well known disorder.

Yoga exercise is probably best-known technique to induce complete physical mental and emotional relaxation. Yoga exercise is a state of consciousness, which is, neither sleep nor awaken, neither is it concentration nor hypnotism. It can be defined, as an altered state of consciousness. According to Maharshi Markandey Yoga exercise is the state of deep relaxation as Lord Vishnu Himself uses this marvelous technique.

Maharshi Markandey according to his visualizations states in his text, Markandey Purana that at the end of Kalpa when the entire universe was in a deep relaxation Lord Vishnu was lying on the bed of serpent in the state of yoga exercise. Drastwa Tavsuraui Chograu prasuptam Cha Janardanam/ Tustav Yoganidram Tamekagrahridyasthitih//

Meaning: When Lord Brahma observed him in the state of yoga exercise to make him awake He started praying the lordess Yoga exercise which lives in the eye of Lord Vishnu [2].

The author of Hatha Yoga Pradipika, great yogi Swatmarama, classifies Yoga exercise as the state of turiya; means the all expansive and encompassing 'fourth dimension', in which Shakti neither contracts nor expands, but is in union with Shiva or supreme consciousness [3].

Abhyaset Khecharim Tavadyavat Syadyoganidritah/ Sampratyoganidrasya Kalo Nasti Kadachana// Meaning: Khechari should be practiced until yogic sleep occurs. For one, who has attained yogic sleep, time become non-existent. Here, the term yoga exercise has used as the state of Samadhi. Yogic sleep or yoga exercise is the state in which conscious mind subsides but awareness remains [4].

Correspondence

Rohit

Assistance Professor, Dept. of
Physical Education, AIJHM
College, Rohtak, Haryana, India

Yoga exercise is simplified version of Tantric Kriyas, designed by Swami Satyananda, Bihar School of Yoga, Munger in present form⁵. Yoga exercise is probably best known technique to induce complete physical, mental and emotional relaxation. This was proved through a series of study done at Cherring Cross Medical School London that it is a technique in which one can alter the states of consciousness from beta to alpha and then to delta. Therefore, subject enjoys the different state of consciousness, knowingly. It is a pratyahara but also opens the door for meditation⁶.

Yoga exercise also brings simultaneous relaxation by inducing alpha brainwave in both hemispheres of brain and alter the states of consciousness. It has been further proven that it is the safest, weakest and surest methods to bring about alter state of consciousness in human beings. Therefore, it is panacea or Ram ban for the management of psychosomatic illness. Recognizing the problem is half the battle.

Research Study

Without knowing what stress is, and how it may strain our health, we will not be able to recognise it. Awareness is of primary importance of we are to learn to manage stress effectively. Our body is often the first place to reveal signs of a problem. Unfortunately, our upbringing often trains us to be stoic and in our anxiety not to appear weak, we often deny signs of stress⁷.

In yoga exercise, it is not necessary to concentrate. One should just keep the mind moving from point to point and be aware of every experience. Yoga exercise means sleep with a trace of awareness. Various studies have been done in different part of world for observing the effect of Yoga exercise as in an important study it has been observed that Yoga exercise significantly lowered levels of serum cholesterol in cardiac patients⁸.

One of the study states that, the future role of Yoga exercise in coronary care and management regimes appears to be a major one. The value of the practice of yogic relaxation in prevention of cardiovascular disease has been fairly well recognised and accepted⁹. Another study demonstrates that the drop in blood pressure induced by daily Yoga exercise practice has a far reaching effect, extending throughout the day, and is not merely a transient effect coincident with the practice session¹⁰. Another study found that a reduction in blood pressure and anxiety levels in hypertensive patients continued for 12 months after Yoga exercise training¹¹.

Technique of Yoga exercise has preventive, promotive and curative value. It prevents stress and stress-related disorders by inducing deep physical, emotional and mental relaxation, by training the mind to remain calm and quiet and by rooting out the repressed desires and thoughts from the deeper realms of the mind. As a promotive science, Yoga exercise awakens the inherent creativity and promotes the learning and memory abilities of the practitioner. Researches also indicate that yoga exercise can be used as a therapeutic technique to cure psychological disorders like anxiety, hostility, insomnia, etc. and psychosomatic diseases like asthma, coronary heart disease, cancer, hypertension, etc. In the present modern lifestyle, where psychological and psychosomatic problems are on the rise, the technique of yoga exercise may serve as a real boon for mankind¹².

One of the studies, there was psi missing with the preliminary test session. At the time it was felt that this was due to the students doing too many preliminary tests, so that they were too rushed and confused by the time the experimental test occurred. Therefore, this year the students did less

preliminary testing, so the class was less rushed and they were more at ease with the procedure. This resulted in improved overall scoring. The relaxation session gives a consistent score over both years.

The meditation session compares favorably with the score from the previous year, which was in the psi-hitting range but not significantly so, as does the Yoga exercise, which compares very favorably with the psi-missing of the previous year. This suggests that the lessons learnt from the first year are resulting in an environment, which is more conducive for psi-testing¹³. In another study on 30 students, 15 days practice of Yoga exercise had a positive effect in enhancing the memory of children¹⁴.

Researchers are keen to know the effect of Yoga exercise in various directions; thus it is the right time to go deep into the search of the impact of Yoga exercise to assess the effect of Yoga exercise on stress level of the subjects, and to assess the effect of Yoga exercise on anxiety level of the subjects.

Methodology

Eighty students (40 male and 40 female) of ranged 20-30 yrs from Dev Sanskriti Vishwavidyalaya of PG Yoga classes selected for the practice of Yoga exercise assigned to the experimental group. One of the groups of thirty students (15 male and 15 female) of same age group and same class also considered as control group. Both the groups, experimental and control groups were from PG Yoga classes, so all had been practicing the set of Asanas, Pranayamas and Shatkarmas regularly. Additionally, the experimental group was practicing Yoga exercise for half an hour daily.

Before starting the practice of Yoga exercise, both the groups went through few psychological tests. Practice of Yoga exercise is the simplest method of relaxation, which is being practiced in the flat lying position of shavasana and follows the spoken instruction of Yoga instructor. The practice includes the resolve, body part awareness, breath awareness and visualisation. To assess the impact of Yoga exercise, parameters were stress and anxiety. For the measurement of stress and anxiety level, Eight State Questionnaire had been applied. After six months, the same test was repeated and the data's at 0.01 significant levels are shown¹³.

Result and discussion

The practice of Yoga exercise decreased the anxiety and the stress levels of the subjects of practice group. Mean and standard deviation of the experimental and control group for anxiety level in subjects are given (Table 1). There is a positive change in the level of anxiety between both the groups (Fig. 1).

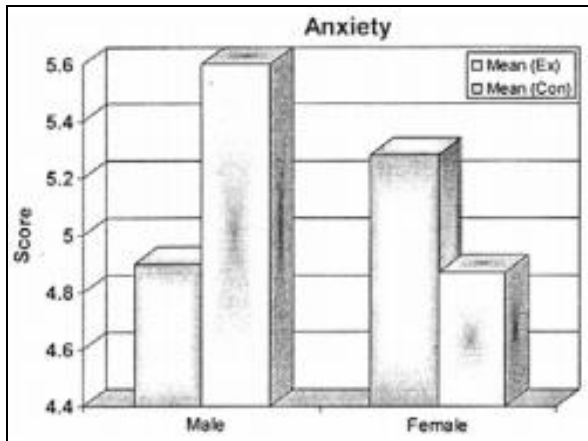
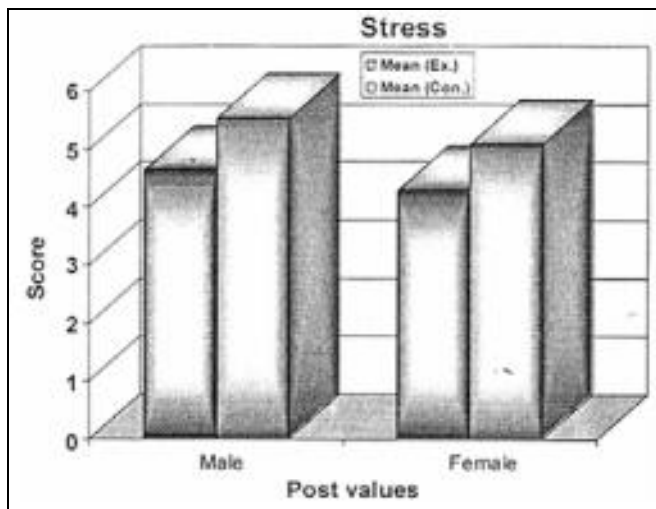
The significant level for observing the t value is 0.01 and shows the significant change in stress level as "t" value is 2.5. Mean and standard deviation of the experimental and control group for stress level are given (Table 2). It is observed that there is a positive change in the level of stress in male subjects between both the groups (Fig. 2). The significant level for observing the t value is 0.01 and shows the significant change in stress level as "t" value is 2.48.

Table 1: Effect of Yoga on anxiety level

	Mean	sd	"t" value	significant level
Experimental	4.90	1.22	2.5	at 0.01
Control	5.60	1.45		

Table 2: Effect of Yoga on stress level

	Mean	sd	"t" value	significant level
Experimental	4.95	1.26	2.48	at 0.01
Control	5.67	1.23		

**Fig 1:** Effect of Yoga on anxiety level**Fig 2:** Effect of Yoga on stress level

Conclusion

Stress is a cognitive or emotional response made by the individual towards any situation, which demands adjustment. When the demands of the situation exceed the ability of the individual distress results, which may manifest in mental and physical symptoms of abnormality.

The practice of Yoga exercise helps in building up the coping ability. The practitioner of Yoga exercise slowly becomes aware of the inherent dormant potentialities and thus prevents himself from becoming a victim of distress.

As yoga exercise relaxes the physical as well as mental stresses, it relaxes the whole nervous system. Stress-related disorders evolve gradually through four stages. In the first stage, psychological symptoms like anxiety and irritability arise due to over activation of the sympathetic nervous system [14, 15]. Yoga exercise can be considered as a highly effective practice for reducing stress on the basis of the study, as yoga exercise releases the stress of the students of higher classes. Practice of yoga exercise also reduces the anxiety of male and female subjects both. It may have positive results for the other

age groups and occupations also.

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