

Short communication

Effect of *pranayama* on stress in doctorsGayathri Dilliraj¹, Harini Kannan², B. Shanthi³^{1,2}Tutor, ³ Head, Department of Biochemistry, Sree Balaji Medical College & Hospital, Chrompet, Chennai- 44, Tamilnadu

(Received: September 2019 Revised: December 2019 Accepted: January 2020)

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ABSTRACT

In recent years, many medical and scientific studies on yoga proved to be very useful in the treatment of few diseases. This study was conducted mainly to find the effects of yoga on the stress in female doctors. This is an experimental study with pre post-test scores. To collect data, the questionnaire based on stress was used. A specialist held Pranayama and training sessions for 4 weeks (3 times per week, 30-60 minutes each). Data were recorded based on the pre- post-tests. Fifty female doctors with a mean age of 35 years ± 5.5 were included for analysis. Stress was decreased significantly after 12 sessions of regular pranayama practice. Yoga has an effective role in reducing stress. Thus, it can be used as an alternative health approach.

Keywords: *Pranayama*; stress; female doctors.

INTRODUCTION

The need for regular engagement with emotionally burdened or exhausting situations is something that doctors constantly face and another factor that gives people an increased risk of burnout. They should deal with patients who can be frustrated or scared, who are angry, and they must declare bad news to the patients and their family members, which can be particularly taxing for sympathetic doctors, and this permanent part of a job can be difficult. Doctors are facing various difficult, emotional situations in their day-to-day lifestyle. They are expected to tackle this amount of enormous stress professionally. This requires a strong level of sympathy and a support network for the doctors themselves, but even taking these factors into account, the emotional state of the doctor can be high. Other professions that are associated with emotionally difficult situations as a regular part of a job may also be at risk of combustion (1). So, alternative health approach refers to a category of treatments and interventions that have not been raised in modern medicine.

What is yoga?

‘Yoga’ means to join or yoke together and it brings body and mind together, which has been used in eastern societies since 5000 years ago and now recently, received more attention from western countries (2). In recent years, several medical and scientific studies on yoga proved to be very useful in the treatment of few diseases. Studies have demonstrated effect of yoga for many medical conditions, which includes multiple sclerosis, asthma (3), IBD, lymphoma, uncontrolled hypertension, drug addiction, osteoarthritis and mental illness. Yoga exercises has improved the variables of psychological status, and the quality of life (4). Researchers suggest that yoga has both intellectual

and mental exercise, which improves health, and the mental status (5) yoga can surely improve the psychological conditions for monitoring and managing stress and also the negative emotions, it also increases positive emotions, and help mental balance (6). This study was conducted mainly to find the effects of pranayama on stress in female doctors during 2018-2019.

METHODS

Inclusion criteria: Female doctors and non-pregnant women with the ability to perform pranayama.

Exclusion criteria: Pregnant women, doctors with menstruation, low blood pressure, cardiovascular diseases and those who are taking medication for psychiatric disorders.

Who should not do pranayama?

- Not recommended during periods and pregnancy.
- Patients with cardiovascular diseases
- Patients undergoing radiotherapy and chemotherapy.
- Patients with fever, bronchitis and pneumonia

This is an experimental study with pre-post test scores. The questionnaire based on Stress was used. A well-trained yoga instructor held Pranayama yoga and training sessions for 1 month (3 times per week, 30-60 minutes each). Data were recorded based on the pre-post test scores. We used perceived test scores scaling to measure the pre-post-test stress levels, it was mainly a questionnaire based scoring. Score: The results of the PSS were obtained by reversing the response (e.g., 0 = 4, 1 = 3, 2 = 2, 3 = 1 and 4 = 5 0) to four positive results and then adding all elements of the scale. On questions 2, 4, 5 and 10 of the PSS 10 scale we can make a short scale of 4 points.

The questions in this scale ask you about your feelings and thoughts **during the last month**. In each case, you will be asked to indicate by circling *how often* you felt or thought a certain way.

Name _____ Date _____

Age _____ Gender (Circle): **M** **F** Other _____

0 = Never 1 = Almost Never 2 = Sometimes 3 = Fairly Often 4 = Very Often

1. In the last month, how often have you been upset because of something that happened unexpectedly? 0 1 2 3 4
2. In the last month, how often have you felt that you were unable to control the important things in your life? 0 1 2 3 4
3. In the last month, how often have you felt nervous and "stressed"? 0 1 2 3 4
4. In the last month, how often have you felt confident about your ability to handle your personal problems? 0 1 2 3 4
5. In the last month, how often have you felt that things were going your way? 0 1 2 3 4
6. In the last month, how often have you found that you could not cope with all the things that you had to do? 0 1 2 3 4
7. In the last month, how often have you been able to control irritations in your life? 0 1 2 3 4
8. In the last month, how often have you felt that you were on top of things? .. 0 1 2 3 4
9. In the last month, how often have you been angered because of things that were outside of your control? 0 1 2 3 4
10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them? 0 1 2 3 4

How to do pranayama?

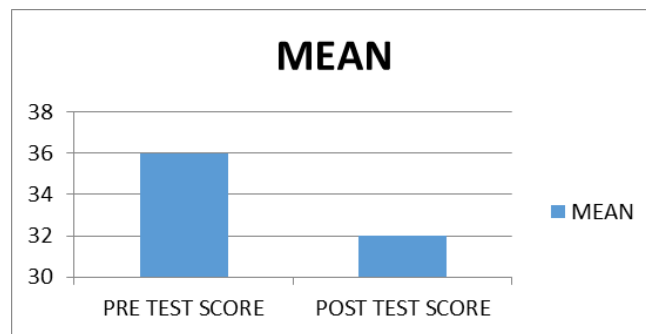
This is an ancient Indian practice associated with breathing control. Several researches have shown that regular pranayama practice can give relief from the symptoms of bronchial asthma; it is also useful in the treatment of stress-related disorders. 1. Breathe deeply through the nostrils first, feel how the diaphragm moves downward, allowing the lungs to spread and force the stomach to get out, and then you feel like your breasts widen. 2. Breathe quickly through the nostrils. Feel the throat emptying, and the lowering of the stomach during expansion of the lungs. This process of exhaling should be much faster than the inhalation process - almost as a quick deflation. 3. Repeat the procedure; Keep doing this for 5 minutes. 4. with the practice of accelerated

breathing. Beginners need to start slowly to avoid hyperventilation, but in the end, they can turn into a fast breathing technique.

RESULTS

The total eligible sample consisted of 50 female doctors with a mean age of 35 ± 5.5 years. The difference between mean scores of stresses before and after 12 sessions of regular pranayama practice was significant. The Mean perceived stress scores came down from 36 to 32 with a significant p value i.e., $p < 0.05$.

Regular practice of pranayama helps in reducing the stress, depression that is significantly proved from the pre post-test scores based on the experimental study.



DISCUSSION

Pranayama is control of breath. "Prana" is breath or vital energy in the body. On subtle levels, prana represents the "PRANIC" energy responsible for life or life force, and "AYAMA" means control. Therefore, Pranayama is "Control of Breath" (6). This particular study showed that 12 sessions of intervention as regular pranayama significantly reduced stress in female doctors. Previous studies have proved that unlike other sports, yoga has better controlling the mind and central nervous system. It has a good effect on the central nervous system, endocrine system and physiological factors. Therefore, it is very effective in improving stress and psychological disorders (7).

One limitation of this study was only the female doctors were studied and since there were no willingness from male doctors; they have not been studied in this research.

Benefits of Pranayama

1. Regular practice of pranayama enhances the functioning of the respiratory system, by giving more oxygen to lungs.
2. It helps in the expansion of lungs and improves its quality.
3. It controls ageing.
4. By making more oxygen for circulation, it helps in losing weight, because more oxygen burns more fat.
5. It stimulates both sympathetic and parasympathetic nervous system and helps in getting relief from stress, anxiety and depression.
6. It decreases the signs of oxidative stress in the body.
7. Gives relief from the bronchial asthma symptoms.
8. It helps in lowering the blood pressure and regular practice of pranayama extends the lifespan and one's perception of life.

This is an experimental study with pre and post test scores, ethical clearance was obtained from the institution of Sree Balaji Medical College and Hospital. This study population is mainly of female medical practitioners in the hospital. Informed and written consents have been got from the female medical practitioners before doing this study.

CONCLUSION

What does pranayama do to your body?

In stressful conditions, we usually breathe very rapidly which will lead to building up of oxygen in the bloodstream and reduction of carbon dioxide, which in turn affects the acid-base balance and pH level of the blood, known as respiratory alkalosis, which causes dizziness, twitching, intense worry, frustration.

Pranayama raises the carbon dioxide level which gently brings the pH level back to a less alkaline state, when the pH changes, the parasympathetic nervous system pacify us, by telling the vagus nerve to secrete ACh, which lowers the rate of the heart. Yoga has been proved to benefit women's health. In our study, it was proved that yoga has an effective role in reducing stress that can be considered as alternative health approach and it is cost effective by reducing the use of drugs (8). Thus, it can be concluded that pranayama has a significant effect on stress related disorders.

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