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## Role of Yoga and Pranayama in Anxiety: A Review Article

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### ABSTRACT:

In India, rates of anxiety are quite high in the general population with women, young adults and the elderly particularly vulnerable. In recent years, Holistic approaches are gaining increasing popularity in the management of psychiatric disorders. Yoga is among the oldest sciences with a holistic approach and hence, has been studied extensively in psychiatry. This increase in popularity is partly due to interest in how this practice, with its aspects of mindfulness and meditation, can reduce anxiety. In yoga, physical postures and breathing exercises improve muscle strength, flexibility, blood circulation and oxygen uptake as well as hormone function. In addition, the relaxation induced by meditation helps to stabilize the autonomic nervous system with a tendency towards parasympathetic dominance. Physiological benefits which follow, help yoga practitioners become more resilient to stressful conditions.

**Key Words:** Anxiety, Meditation, Psychiatric disorders Yoga

## INTRODUCTION

Anxiety leads to derangement in physical and mental health. Experiencing occasional anxiety is a normal part of life. However, people with anxiety disorders frequently have intense, excessive and persistent worry and fear about everyday situations. Often, anxiety disorders involve repeated episodes of sudden feelings of intense anxiety and fear or terror that reach a peak within minutes (panic attacks). Effects of stress in modern life hold may lead to a series of complications, which may include body ache, weight gain, easy fatigue, headache, pain extremities, breathing difficulty, asthma. Some studies suggest that experiencing anxiety could increase the risk of developing certain long-term physical health problems, including diabetes, stomach ulcers and heart problems. Unusually high anxiety and fear about social situations, if left untreated, social anxiety disorder may lead to depression, drug or alcohol problems, school or work problems, and a

poor quality of life. The current weighted prevalence of anxiety disorders was 2.57% (95% confidence interval: 2.54–2.60). Risk factors identified were female gender, 40–59 age group, and urban metro dwellers. Around 60% suffered from the disability of varying severity. The overall treatment gap for ADs was 82.9%. During COVID 19, the study stated that 74 per cent and 88 per cent of Indians reported stress and anxiety respectively. Certain research and news state that yoga can help to temper anxiety while also releasing physical tension. Practice of yoga can improve mental exertion, improve the different complications. Regular yogic practices and adapting and implementing the principals and philosophy of yoga in day-to-day life may decrease the anxiety level and improve the overall health of the patients. Yoga is the restraint (control, mastery) of the modifications (changes, movement, thought-forms) of the mind field. This is the most fundamental of the yoga sutras; it is the yoga



definition. It defines Yoga, Union, Self-realization, Mind Control and Enlightenment. Yoga is the culmination of psyche and its stuffs. The mind consists of various ongoing thoughts and already present thought. Yoga helps in removing and culminating those thoughts from psyche. Yoga is the union of psycho-spiritual and physiological balance of one's identity Yoga refers to a scientific scheme of physical and mental practices that originated in India approximately 3000 years ago. The yoga practices were designed to facilitate development and integration of the human body, mind, and breath to produce structural, physiological, and psychological effects.<sup>1</sup> The aims of yoga are the development of the following viz. a strong and flexible body free of pain, a balanced autonomic nervous system with all physiological systems, e.g., digestion, respiration, endocrine, functioning optimally; and a calm, clear, and tranquil mind. Beyond these specific outcomes, yoga practices are intended to facilitate self-transformation at every level of functioning, with the goal of improving the overall quality of life.

## MATERIALS AND METHODS

The commentaries available on the Ayurvedic Samhitas have also referred to collecting relevant matter. Medical journals, both index and non-index, have also been referred to as sources of information on relevant topics.

### Causes of Anxiety:<sup>2</sup>

There are a number of causes which leads to anxiety disorders. The areas of brain center that control fear and emotions may involve in some cases. Genetic and environmental factors may contribute to the development of this problem. Some of the common external factors which cause anxiety disorders include:

1. Work Stress.
2. Stress in a personal relationship such as marriage.
3. Financial problems.
4. Tension due to some serious illness.
5. Side effects of some long-term medication etc.

### Several types of anxiety disorders<sup>3</sup>

1. **Agoraphobia**: it is a type of anxiety disorder in which you fear and often avoid places or situations that might cause you to panic and make you feel trapped, helpless or embarrassed.
2. **Anxiety disorder due to a medical condition** includes symptoms of intense anxiety or panic that are directly caused by a physical health problem.
3. **Generalized anxiety disorder** includes persistent and excessive anxiety and worry about activities or events —

even ordinary, routine issues. The worry is out of proportion to the actual circumstance, is difficult to control and affects how you feel physically. It often occurs along with other anxiety disorders or depression.

4. **Panic disorder** involves repeated episodes of sudden feelings of intense anxiety and fear or terror that reach a peak within minutes (panic attacks). You may have feelings of impending doom, shortness of breath, chest pain, or a rapid, fluttering or pounding heart (heart palpitations). These panic attacks may lead to worrying about them happening again or avoiding situations in which they've occurred.
5. **Social anxiety disorder (social phobia)** involves high levels of anxiety, fear and avoidance of social situations due to feelings of embarrassment, self-consciousness and concern about being judged or viewed negatively by others.
6. **Specific phobias** are characterized by major anxiety when you're exposed to a specific object or situation and a desire to avoid it. Phobias provoke panic attacks in some people.
7. **Substance-induced anxiety disorder** is characterized by symptoms of intense anxiety or panic that are a direct result of misusing drugs, taking medications, being exposed to a toxic substance or withdrawal from drugs.
8. **Other specified anxiety disorder and unspecified anxiety disorder** are terms for anxiety or phobias that don't meet the exact criteria for any other anxiety disorders but are significant enough to be distressing and disruptive.

### How Yoga works in Stress and Anxiety

Since the 1970s, meditation and other stress-reduction techniques have been studied as possible treatments for depression and anxiety. One such practice, yoga, has received less attention in the medical literature though it has become increasingly popular in recent decades. Available reviews of a wide range of yoga practices suggest they can reduce the impact of exaggerated stress responses and may be helpful for both anxiety and depression. It mainly acts via down-regulating the HPA axis that trigger as a response to a physical or psychological demand (stressor) leading to a cascade of physiological, behavioral, and psychological effects, primarily as a result of the release of cortisol and catecholamines (epinephrine and norepinephrine).<sup>3</sup> This response leads to the mobilization of energy needed to combat the stressor through the classic "fight or flight" syndrome. Over time, the constant state of hypervigilance resulting from repeated firing of the HPA axis can lead to deregulation of the system and ultimately diseases such as

obesity, diabetes, autoimmune disorders, depression, substance abuse, and cardiovascular disease.<sup>4</sup>

In this respect, yoga functions like other self-soothing techniques, such as meditation, relaxation, and exercise. By reducing perceived stress and anxiety, yoga appears to modulate stress response systems. This, in turn decreases physiological arousal e.g., reducing the heart rate, lowering blood pressure, and easing respiration. There is also evidence that yoga practices help increase heart rate variability, an indicator of the body's ability to respond to stress more flexibly. A small but intriguing study further characterizes the effect of yoga on the stress response. In 2008, researchers at the University of Utah showed that among control subjects and yoga practitioners, by functional MRIs, that yoga practitioner had the highest pain tolerance and lowest pain-related brain activity during the MRI. The study underscores the value of techniques, such as yoga, that can help a person regulate their stress and, therefore, pain responses.<sup>5</sup>

#### **Different Yoga for anxiety**

1. **Tree poses (*Vrikshasana*)<sup>6</sup>** This classic standing pose may help you focus inward, quieting racing thoughts.  
**Technique:** From standing, bear your weight with your right foot and slowly lift your left foot off of the ground. Slowly turn the sole of your left foot toward the inside of your left leg. Place it on the outside of your left ankle, calf, or thigh. Avoid pressing your foot into your knee. Bring your hands into any comfortable position. This could be in prayer position in front of your heart or hanging alongside your sides. Hold this pose for up to 2 minutes. Repeat on the opposite side.
2. **Triangle poses (*Trikonaasana*)<sup>5</sup>** This energizing pose can help ease tension in your neck and back.  
**Technique:** Come into a standing position with your feet wider than your hips. Face your left toes forward and your right toes in at a slight angle. Lift your arms to extend out from your shoulders. Your palms should face down. Extend your torso forward as you reach forward with your left hand. Hinge at your hip joint to bring your right hip back. Take your left hand to your leg, the floor, or a block. Extend your right arm up toward the ceiling. Gaze in any comfortable direction. Hold this pose for up to 1 minute. Then do the opposite side.
3. **Standing Forward Bend** This resting standing pose may help relax your mind while releasing tension in your body.  
**Technique:** Stand with your feet about hip-width apart and your hands on your hips. Exhale as you hinge at the hips to fold forward, keeping a slight bend in your knees. Drop your hands to the floor or rest them on a block. Tuck

your chin into your chest. Release tension in your lower back and hips. Your head and neck should hang heavy toward the floor. Hold this pose for up to one minute.

4. **Downward-Facing Dog (*Adhomukhswanaasana*)<sup>7</sup>**  
**Technique:** Get down on all fours on the floor, with the back flat, not arched or dipped. Push against the floor with the toes to lift the hips into the air. Straighten the arms. Straighten the legs as much as is comfortable. Keep pushing against the floor with the hands to raise the hips higher. Take a few deep breaths before releasing down gently.
5. ***Savaasana*:<sup>8</sup>**  
**Technique:** Lie flat on the back with the arms on the floor a few inches from the body. Turn the palms so that they are facing upward. Keep the knees slightly open and the toes pointing outward. Relax every part of the body. Close the eyes and focus on breathing. Breathe slowly and deeply for as long as it takes to feel calmer. Roll onto the right side for a few breaths, then sit up.  
**Pranayama for Anxiety**
1. ***Anulom Vilom (Nadi Shodhana Pranayama)*<sup>9</sup>** This is my personal favorite pranayama for anxiety. It is alternate nostril breathing. Sometimes it's done using a certain ratio and the hands in certain mudras.<sup>10</sup>  
**Technique:** Sit with an erect spine. Your left hand can be placed on the left knee. Set a timer for between one and 10 minutes. You may want to start with just one or two minutes and work your way up to longer. The right-hand thumb closes the right nostril. Inhale through your left nostril, then use your two smallest fingers to close your left nostril. Hold the breath. Exhale through the right nostril. Repeat for the opposite side. Inhale through the right, close, hold, and exhale through the left.
2. ***Ujjayi Pranayama*<sup>11</sup>** This breath is also known as "ocean breath" and is done by taking a deep breath and then creating a sound in the back of the throat while breathing out a long deep exhale. I've included ujjayi pranayama because anytime we bring our focus back to our breath, we are better able to focus and calm the mind. It may also soothe anxiety by decreasing the heart rate.
3. ***Bhramari Pranayama*<sup>12</sup>** *Bhramari* pranayama is done by exhaling in a way that sounds like a bee's buzz. Setting a timer can also be helpful for this practice in order to set aside a certain amount of time and be as present and focused on the practice as possible.  
**Technique:** Place your index fingers into your ears. Inhale through the nose. With the mouth closed, making a humming noise while exhaling. Repeat as many rounds as you like or until your timer goes off. This practice

stimulates the vagus nerve and activate the parasympathetic nervous system, thus decreasing anxiety.<sup>13</sup>

## DISCUSSION

A number of studies have shown that yoga may help reduce stress and anxiety. Yoga can enhance your mood and overall sense of well-being. Yoga might also help you manage your symptoms of depression and anxiety that are due to difficult situations. As a mind-body practice, yoga allows people to become aware of the link between their minds and bodies in a way which can help them become less anxious. For example, shallow breathing may contribute to a heightened stress response, or repeated patterns of behavior might ultimately worsen overall anxiety (for instance, relying on alcohol to calm down). *Yoga* increases mind-body awareness, as well as offering a form of relaxation which can replace unhealthy coping mechanisms. Relaxation techniques such as deep relaxation techniques and *yoga nidra* are very beneficial in anxiety disorders. *Yoga nidra* is qualitatively different from relaxation. It is a 'sleep' where all the burdens are thrown off to attain a more blissful state of awareness, a relaxation much more intense than ordinary sleep. *Yoga Nidra* aims to focus the mind to achieve relaxation and increase wellness. During anxiety and depression, there is a decrease in neurotransmitters such as serotonin and norepinephrine.<sup>14</sup> Besides, an increased level of cortisol has a role in causing depression by regulating the function of serotonin and norepinephrine. Yoga helps in decreasing the cortisol levels leading to a counter-regulatory effect to reduce the depressive and anxiety symptoms.<sup>15</sup> Meditation can be done for improving the concentration and to stabilize the mind. It has been proven to be a very good solution for stress management. This practice is a promising new treatment for stress related disorders. Meditation indicates a potential role in reducing maladaptive and compulsive behaviors. These techniques alter theta and alpha EEG patterns significantly more than regular relaxation. Yoga is important in day-to-day life, not only for the people who have anxiety disorders, but to improve the overall health and quality of life. Regular practice of yoga helps to achieve peacefulness of body and mind. Practice of Pranayama, Yoga and meditation controls the limbic hypothalamus axis. This reduces the anxiety and reduces the high level of stress hormones present in the blood.<sup>16</sup> It also increases the level of beneficial hormones like adrenaline and encephalin. These

two hormones have positive effect on our body and strengthen the immunity system. The body gets the ability to protect itself from diseases and does not allow the entry of infections and other contagious diseases. Yoga and Pranayama are not merely physical exercises but they strongly influence our consciousness. Yoga and Pranayama have a direct positive impact on our thinking. Yoga and Pranayama have also led to lot of reduction in stress levels. The present life style and stress has adversely affected memory power of lot of people and they also got a chance to rejuvenate after coming into the shelter of Yoga. In Germany in 2005, 24 women who described themselves as 'emotionally distressed' took two 90-minute yoga classes a week for three months, while a control group maintained their usual activities without engaging in an exercise or stress-reduction program during. At the end of the three months, the women in the yoga group reported improvements in perceived stress, depression, anxiety, energy, fatigue and well-being.<sup>17</sup> Most impressively, depression scores improved by 50% and anxiety scores by 30%.

## CONCLUSION

According to Medical Scientists, Yoga and Pranayama therapy is successful because of the balance created in the nervous and endocrine systems which directly influences all the other systems and organs of the body. Yoga and Pranayama act both as a curative and preventive therapy. The very essence of Yoga and Pranayama lies in attaining mental peace, improved concentration powers, a relaxed state of living and harmony in relationship. Through the Practice of Yoga and Pranayama, we become aware of the interconnectedness between our emotional, mental and physical levels. Gradually this awareness leads to an understanding of the more subtle areas of existence.

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