



## ASTHMA AND PSYCHIATRIC DISORDERS

### Medicine

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### ABSTRACT

Asthma is a common chronic inflammatory disorder characterized by hypersensitivity of the airways and reversible, episodic airway obstruction. Typical symptoms of asthma include wheezing, coughing, chest tightness, and dyspnoea. In addition to physiologic dysfunction, many people with asthma also suffer from psychological distress in the form of depression, anxiety, and emotional disorders. Asthma attacks and the associated panic or anxiety can affect the lifestyle, well-being, and perceived health status of people with asthma to varying degrees, making improving quality of life an important issue in asthma management. The prevalence of asthma has increased dramatically over the past decade. Globally, asthma affects about 300 million people, and this figure continues to rise. Asthma represents a huge economic burden on society. Yoga practices have a place in the healthcare system as a treatment for a variety of psychiatric conditions, as an adjunctive treatment.

### KEYWORDS

Adjunctive; Asthma; Dyspnoea; Psychiatric; Quality Of Life.

### INTRODUCTION

Asthma is a chronic inflammatory respiratory disease characterized by periodic attacks of wheezing, shortness of breath, and a tight feeling in the chest. A cough producing sticky mucous is a characteristic symptom. It is very common in children, teens and adults. It is a condition where the air passages in the lungs become inflamed. When the air passages get inflamed, it becomes red and swollen. It starts to swell and sticky mucous or phlegm is produced. All these factors cause the airways to become narrow and make it difficult to breathe. Asthma attacks occur when the lungs are not getting enough air to breathe with the results of coughing, wheezing, shortness of breath and a tight feeling in the chest. Asthmatic attacks can be triggered by allergies, exercise, cold, air pollution and stress related disorders. In addition to physiologic dysfunction, many people with asthma also suffer from psychological distress in the form of depression, anxiety, and emotional disorders.<sup>[1-2]</sup>

Yoga originated from ancient India and remains an important aspect of India's diverse culture. Yoga includes such common components as breathing exercises (pranayama), postures (asanas), and meditation (dhyana).<sup>[3]</sup> As a holistic therapy, yoga contains no asthma-specific posture or breathing exercises.<sup>[4]</sup> The exact mechanism by which yoga may affect asthma symptoms is not fully understood. However, several explanations have been proposed. The first explanation is related to the breathing pattern in yoga practice. One trigger of asthma attacks is frictional stress in airways, which could damage the airway wall, affect the dynamics of airway smooth muscle, and result in mast cell degranulation.<sup>[5-6]</sup> Some studies have shown that the tidal volume and breathing rate decrease during yoga practice<sup>[7-8]</sup>, which may interfere with the process that triggers asthma attacks. Empirically, randomised controlled trials (RCTs) conducted in people with asthma have demonstrated that specific breathing exercises or techniques could help reduce acute exacerbations and rescue bronchodilator use as compared with no intervention, and could significantly improve quality of life as compared with asthma education.<sup>[9-12]</sup> Secondly, certain yoga postures may help expand the chest and increase breath-holding time as well as vital capacity.<sup>[4]</sup> This could logically have some effect on the lung function of people with asthma. Thirdly, by practicing yoga people with asthma may achieve a sense of relaxation and a positive mood, thus reducing the autonomic arousal factors.<sup>[13-14]</sup>

### ASTHMA AND PSYCHIATRIC DISORDERS-

The first study of yoga in a population including psychological conditions appeared in the Journal of the Yoga Institute in 1971 and reported on improvements in symptoms of patients with anxiety, depression and schizophrenia.<sup>[15]</sup> The environmental gratifications and frustrations that is the root cause of many psychiatric disorders.<sup>[16]</sup> A number of clinical trials have been carried out to evaluate the efficacy of yoga for asthma. Some of them suggest that yoga may enhance pulmonary function and reduce airway hyper-responsiveness, emotional stress, and asthma attacks<sup>[17-18]</sup>, while others showed that yoga conferred rather limited or even no benefit.<sup>[19]</sup>

There is a notable paucity of data examining whether treating mental disorder in people with asthma will improve asthma outcome. Brown and colleagues randomized 90 patients with asthma and an episode of depression to citalopram, a commonly used antidepressant, or placebo.<sup>[20]</sup> Perhaps the most interesting result in the study was the fact that patients who had substantial improvement in depressive symptoms (regardless of whether they were medication or placebo treated) had greater improvement in a variety of asthma-related scales than patients whose depressive symptoms did not improve significantly.

To our knowledge, only one other trial, conducted several decades ago, has evaluated the impact of antidepressant treatment on asthma outcome. In 1969, Sanger examined whether the antidepressants amitriptyline and doxepin improved depressive and anxiety symptoms in patients with allergic diseases, including some patients with asthma.<sup>[21]</sup>

A study concluded that up to one-third of children and adolescents may meet the criteria for a comorbid anxiety disorder. The rates of anxiety disorder in adults with asthma ranged from 6 to 24%. A study examined not only the rates of depression and anxiety in adolescents but also the likelihood that the comorbid psychiatric condition was recognized and treated. Only about one-third of youth with anxiety had the condition recognized within the last year, and only about one in five youth with Major depressive disorders (MDD) had adequate treatment.<sup>[22]</sup> Individuals with asthma may have an elevated risk of developing psychiatric illnesses such as depression, anxiety disorders, and posttraumatic stress disorder (PTSD).<sup>[23]</sup>

Relaxation techniques are generally conducted with or without biofeedback and were the focus of several earlier studies of psychological interventions in asthma. Relaxation techniques control stress and anxiety, which, in asthma, may improve breathing and respiratory function. Such programs generally include progressive relaxation, autogenic training, which focuses on attending to bodily feelings and mentally controlling them, and hypnosis or deep relaxation, which may be induced using mental imagery. This is often accompanied by autosuggestion to create positive thoughts and feedback of biologic indicators, which the subject must control via relaxation. Alexander and Weingarten measured the effect of relaxation therapy on peak expiratory flow and found effects favoring the treatment group compared with the control group.<sup>[24-25]</sup>

The prevalence of MDD is higher in people with asthma relative to the general population. Individuals with allergic disease also have higher rates of MDD than nonatopic individuals.<sup>[26]</sup> The presence of atopic disease increases the risk of depression in both men and women. Further support for a link between asthma and MDD comes from family studies that suggest that the prevalence of one disorder is increased in the family members of index cases with the other. The

initial evidence for this link came from mothers whose children had asthma but did not have MDD.<sup>[27-28]</sup> In some studies, rates of depression in family members were related to the severity of the child's asthma symptoms, raising the possibility that these were related to the stress of having an ill child.<sup>[29-30]</sup>

## YOGA AND ASTHMA

There are a few studies have done in the field of yoga and asthma which showed its positive impact on asthma but none of the studies have done on psychosocial disorders due to poor and unstable asthma. Study of Dr. Nagendra and Nagarathana was first study in this field. They concluded that yoga produce physical and mental relaxation and are thought to have a stabilizing effect on bronchial reactivity, through reduction of vagal efferent activity.<sup>[31]</sup> Three uncontrolled studies of yoga among asthma patients found improvement in asthma symptoms, as well as a more positive attitude, feelings of well-being, and fewer symptoms of panic.<sup>[32,33,34]</sup>

A randomized controlled study on 241 patients of mild to moderate persistent chronic bronchial asthma patients (121 patients of the yoga group and 120 patients of the control group) and concluded significant improvement in bio- chemical profile of asthmatics in the yoga group, superoxide dismutase activity also improved in yoga group than the controls.<sup>[15]</sup> The study also reported that asthma symptom scores decreased significantly after the practice of yoga for the period of 6-month in the yoga group in comparison to controls.<sup>[16]</sup> Yoga group got significantly better improvement in spirometric variables<sup>[17]</sup> and about 55% decrease was found in rescue medication use in the yoga group in comparison to controls.<sup>[18]</sup> Therefore, it can be said that yoga is one of the complementary medicines which put a great impact on human body. There are more evidences in favor of yoga practices but it should be remember that yoga alone cannot be used as a treatment modality. It is an alternative and complementary method to improve asthma and can be practiced as an adjuvant therapy along with standard inhalation therapy for better management of asthma.

## CONCLUSION

Studies of psychological intervention in patients with asthma are limited in their interpretation by the heterogeneity of patient samples, intervention technique, and outcome measures. Asthma and stress-related psychiatric disorders share a number of environmental risk factors and pathophysiologic mechanisms. Perhaps the most persuasive of these is the early experience of stress and its effects on Glucocorticoid resistance as a vulnerability and prognostic factor for both depression and asthma. There are many physiologic points of intersection between asthma and mental disorders, however, and the specificity of these associations remains to be determined.

## CONFLICT OF INTEREST

(If present, give more details): None

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