



## Research Article

## Section: Naturopathy and Yogic Sciences

# Role of Natural Therapies in Stress Reduction and Blood Pressure Management- a Review

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## ABSTRACT

**Introduction:** Hypertension and chronic stress are among the leading contributors to cardiovascular diseases worldwide. Conventional pharmacological treatments are effective but may carry side effects and are not always accessible or sustainable for long-term management. Increasing interest has turned toward natural therapies, including herbal medicine, yoga, meditation, acupuncture, and dietary interventions, for their potential to reduce stress and regulate blood pressure. **Methods and Materials:** This review analyzed peer-reviewed articles from 2010 to 2024 using databases such as PubMed, Scopus, and Google Scholar. Keywords included “natural therapy,” “stress reduction,” “blood pressure management,” “herbal medicine,” and “mind-body practices.” Inclusion criteria required studies to examine the physiological and psychological effects of natural therapies on human subjects. Randomized controlled trials, cohort studies, and systematic reviews were prioritized. **Results:** Evidence consistently supports the role of natural therapies in lowering blood pressure and reducing stress levels. Practices such as yoga and meditation showed reductions in systolic and diastolic blood pressure ranging from 5 to 15 mmHg in hypertensive patients. Herbal supplements like garlic, hibiscus, and ashwagandha demonstrated moderate efficacy in lowering blood pressure. Mindfulness-based stress reduction (MBSR) programs significantly decreased cortisol levels and anxiety scores. Acupuncture and dietary changes such as the DASH or Mediterranean diet also yielded positive outcomes. **Conclusion:** Natural therapies offer a complementary approach to conventional treatment for stress and hypertension. While not a replacement for medical care, these interventions may enhance quality of life, reduce medication dependence, and promote holistic well-being. Further high-quality, long-term studies are needed to standardize protocols and confirm efficacy.

## INTRODUCTION

The onset and course of many medical disorders are significantly influenced by psychological variables [1]. Emotional and psychological illnesses such as stress, depression, and anxiety [2], stand out among these causes and provide worldwide mental health issues. Chronic illnesses, including diabetes, heart disease, cancer, and obesity, are all impacted by these disorders, which may have a significant influence on the course of the disease [3]. Suicide rates have risen in many nations as a result of the worrying increase in stress, despair, and anxiety rates, which has turned into a serious public health emergency. Depression is one of the most common mental illnesses, affecting about 264 million people globally,

according to the World Health Organization (WHO) [4].

Additionally prevalent are anxiety disorders, which impact around 3.6% of the world's population. Anxiety and depression alone cost the world economy more than \$1 trillion in lost output annually, making mental health disorders one of the main causes of disability worldwide. Beyond their financial cost, mental health problems have significant societal repercussions, such as strained relationships, fewer chances for education and work, and an increased risk of drug misuse.

Stress, which is the body's reaction to pressure or threats, may make people more vulnerable to inflammatory conditions, such as

infectious infections. Long-term stress reactions may cause physiological alterations, especially in the brain, which can aid in the onset of illness [6]. According to experts, a person's reactions to stress are closely related to how they interact with others in their social surroundings [7]. Excessive worry and tension about possible dangers are hallmarks of anxiety, which may range from adaptive to pathological levels. The second group includes persistent and incapacitating anxiety levels linked to psychological functioning impairment or distress [8,9]. Approximately 301 million people worldwide, or 4.05% of the world's population, suffer from anxiety disorders; this represents a notable growth of more than 55% between 1990 and 2019 [10].

The global prevalence of hypertension is increasing due to population aging and heightened exposure to lifestyle risk factors, such as unhealthy diets characterized by high sodium and low potassium intake, along with insufficient physical activity. Changes in the prevalence of hypertension are not consistent across the globe. Over the last twenty years, high-income countries (HICs) have seen a slight reduction in hypertension prevalence, whereas low and middle-income countries (LMICs) have encountered considerable increases. Three The observed disparities in hypertension prevalence trends indicate that health care systems in LMICs may be encountering a swiftly escalating burden of hypertension and blood pressure-related cardiovascular diseases, potentially compounded by a significant burden of infectious diseases [11].

Recently, nature immersion therapies have been recognized as alternative methods for reducing stress, depression, and anxiety [12-14]. These therapies utilize exposure to natural environmental stimuli to promote physiological relaxation, which may improve immune functions and assist in disease prevention [15]. Multiple methodologies for nature immersion therapy have been established, including practices such as mindfulness, yoga, physical activity, herbal treatments, and lifestyle modifications.

## **THERAPEUTIC APPROACHES**

The therapeutic approaches that incorporate environmental modifications and cognitive behavioral strategies can help individuals to develop resilience and improve their coping mechanisms. Addressing both psychological and environmental factors is crucial for effective mental health interventions. Therapeutic approaches that incorporate environmental modifications and cognitive behavioral strategies can help individuals develop resilience and improve their coping mechanisms.

## **YOGA**

Everybody experiences stress, which affects the brain and body. Stress causes anxiety, fear, trouble relaxing, fast pulse, breathing difficulties, interrupted sleep patterns, changing dietary habits, and increased drug use [16]. Mind-body therapies may treat stress-related mental and physical issues.

Yoga reduces tension and anxiety by relaxing the body and mind [17]. Meditation, precise postures (asana), and regulated breathing are included. Meditation involves separating thoughts and concentrating on breathing to relax the mind. Posing promotes flexibility, stress relief, and comfort. Pranayama, the third kind of Yoga, involves controlled inhalations and exhalations at a specific tempo and intensity. The three styles of yoga may be practiced alone or together. Asana, meditation, and breathing methods improve cognition and neurology differently. Yoga has been shown to reduce depression and anxiety in qualitative studies. Yoga significantly reduces tension and backache [18-20]. Understanding how yoga modifies the brain and body to boost cognition and decrease stress may assist in developing cognitive treatments for healthy and clinical populations.

Research shows that mindfulness meditation is a holistic approach that aims to reduce stress by improving mental well-being and anxiety. Yoga includes physical postures, breathing exercises, and meditation. The findings show that yoga can significantly decrease cortisol levels and improve overall mental well-being. Yoga might reduce anxiety and stress among various populations. Yoga is an ancient practice that combines physical postures, breath control, meditation, and ethical principles aimed to enhance physical and mental well-being. Studies show that yoga practice decreases cortisol levels, promoting relaxation and emotional clarity. Individuals with anxiety disorders benefit considerably from yoga interventions, which offer an alternate or supplement approach to standard therapy. Studies show that regular yoga practice leads to significant reductions in perceived stress and increases resilience, largely attributed to its calming effects on the nervous system and reduction of cortisol levels. Yoga postures, when combined with focused breathing techniques, improve relaxation and mindfulness, and significantly benefit was observed with anxiety disorders than that of conventional therapies. However, yoga fosters a holistic approach to health that emphasizes self-awareness and emotional regulation [21-24].

## **Mindfulness and Meditation**

Mindfulness is being aware of one's thoughts, feelings, bodily sensations, and surroundings in the present moment. It mostly entails non-judgmental knowledge of one's ideas and emotions. It entails seeing things we often overlook because of our busy lifestyles, preoccupation with the past and future, and lack of concentration on the now. The concept of mindfulness contrasts with automatic pilot mode, when we act without much thinking or concentration. When doing tasks like driving, home chores, or dining, we may not fully focus on them, leading to distractions and diverted thoughts. Our autopilot is on. In contrast, mindfulness entails concentrating on and being aware of our actions. Kabat-Zinn (1990) defines mindfulness as nonjudgmental,

patient, open-minded, trusting, nonstriving, accepting, and letting go. In 1997, Kabat-Zinn initiated a Mindfulness-Based Stress Reduction program at the University of Massachusetts Medical School. To cultivate mindfulness, one must observe their thoughts, emotions, and bodily sensations. One should concentrate on diverse experiences one at a time. In addition to observation, non-judgmental description of seen phenomena is required. To practice mindfulness, one must fully participate and concentrate on the work at hand. Practicing mindfulness may cause attention to wander. To regain concentration, gently bring it back to the event.

It boosts the immune system, reduces stress, and promotes great mental health. Mindfulness may increase memory, concentration, problem-solving, and decision-making skills. It may also boost. Enhancing one's self-esteem may contribute to productive partnerships. One of the most crucial actions that we often engage in carelessly is eating. We eat to ensure that our bodies get the nutrients they need. We commonly participate in this action on autopilot when watching TV, browsing our phones, or socializing. Try mindful eating at your next lunch or supper. Turn off the TV, put away your phone, and focus on your meal. Appreciate your meal by noticing its flavor, color, sound, texture, scent, and other sensory aspects. Avoid passing judgment. Maintain mindfulness while doing other things [25].

Meditation is a mental practice that enhances focus, emotional stability, and overall well-being. Studies increasing feelings of calm and contentment. Meta-analysis shows significant benefits for a variety of populations, including those managing chronic pain, stress, and mental health disorders. Meditation is an option for individuals seeking self-care practices that help in personal growth and emotional resilience. Deep breathing exercises are controlling techniques that help in reducing stress and provide a body relaxation response. The breathing exercise shows a positive effect and decreases blood pressure and heart rate. The practice is simple and safe and doesn't need any equipment. A review highlighted that deep breath awareness can lead to improvements in mental health, including reductions in anxiety and depression [26-32]. However, deep breathing enhances oxygen exchange, increases energy levels, and supports mental clarity, building a successful tool for coping with daily stress and enhancing overall well-being. Incorporating deep breathing exercises into daily routines can promote mindfulness and encourage a sense of control in stressful situations. As it is a simple and accessible practice, deep breathing exercises can be utilized by people of all ages, making them a versatile strategy for health and wellness. Physical activity is a well-established method for mitigating stress. Exercise releases endorphins, often called feel-good hormones. A meta-analysis found

that physical activity significantly reduced levels of stress and anxiety [33-38].

## HERBAL TREATMENTS

Herbs have been used for generations to treat a variety of ailments, including stress and anxiety. Certain plants are classified as adaptogens, which are thought to assist the body in adapting to stress and maintaining general equilibrium. Others act as nervines, which relax the nervous system and relieve anxiety symptoms.

Herbal treatments like chamomile, valerian root, and ashwagandha have been shown to promote and reduce by lowering cortisol levels. Herbal treatments like chamomile, valerian root, and ashwagandha have been shown to improve sleep and reduce cortisol levels. Ashwagandha (*Withania somnifera* L.) has the potential to improve cognitive function and memory. Studies recommend that it may positively influence brain health through neuroprotective effects, promoting neuronal growth and reducing oxidative stress [39]. The herb is also believed to support immune function and hormonal balance, contributing to overall well-being [40].

Adaptogen helps to concurrently calm and energize, which neutralizes stress and improves mood, mental clarity, and physical stamina. Ashwagandha and *Rhodiola rosea* are adaptogenic herbs that positively affect the hypothalamic-pituitary-adrenal axis access, which helps in increasing the body's resilience to stressors and combats fatigue. *R. rosea* extract supplementation decrease the systolic blood pressure and heart rate in a dose-dependent manner in spontaneously hypertensive mice [41]. *P. ginseng* has been found to restore and normalize blood pressure [42]. Chamomile (*Matricaria chamomilla* L.) is a widely used herbal remedy known for its calming and anti-inflammatory properties. Commonly consumed as a tea, chamomile is recognized for promoting sleep. Clinical studies show significantly reduced symptoms of generalized anxiety disorder [43].

Herbal extracts such as Hawthorn (*Crataegus*) are used traditionally for lowering the blood pressure and improving the heart function, improve circulation and reduce symptoms of heart related condition. Enhancing myocardial oxygen utilization and providing antioxidant properties, beet root (*Beta vulgaris*) juice is rich in nitrates. Beet root supplements help in lowering blood pressure. Research shows that beet root juice can improve exercise endurance and reduce the oxygen costs of physical activity, and its antioxidant properties may help reduce inflammation [44].

## Life Style Modifications

Consuming fruits, vegetables, whole grains, and low-fat dairy products is encouraged by the DASH diet. According to research, the DASH Diet can significantly lower blood pressure [45].

By enhancing arterial flexibility, lowering systemic vascular resistance, and improving endothelial function,



studies demonstrate that resistance training and aerobics can both considerably lower blood pressure in hyperactive individuals.

Physical activity boosts up cardiovascular health by improving endothelial function, increasing arterial flexibility, and decreasing systemic vascular resistance. Numerous studies show that both aerobic exercise and resistance training can significantly reduce blood pressure in people with hypertension [46]. However, lifestyle adjustments, including regular physical activity, are vital components of the DASH (Dietary Approaches to Stop Hypertension) diet, emphasizes the importance of fruits, vegetables, whole grains and lean proteins has a significant role in blood pressure control [47]. help in reducing blood pressure and metabolic profile, especially uric acid [48].

Magnesium plays a crucial role in regulating stress responses. A randomized controlled trial found that magnesium supplementation resulted in lower cortisol levels and improved cortisol levels and improved overall mood [49]. Natural therapies for blood pressure management: Natural therapies for lowering blood pressure can include lifestyle changes, dietary approaches, and herbal interventions.

## CONCLUSION

Natural therapies play an important role in stress reduction and blood pressure management techniques such as mindfulness meditation, yoga, and deep breathing exercises effectively lower stress levels, leading to improved blood pressure outcomes. Herbal supplements including garlic [50] traditionally suggested herbs such as garlic, onion, Chinese herbal medicine, black and green tea, and sour tea or Hibiscus sabdariffa have also demonstrated beneficial effects on cardiovascular health [51-63]. By integrating the natural therapies into daily routines, individuals may experience better emotional well-being and cardiovascular health, offering a holistic approach to managing stress and hypertension in conjunction with conventional treatments.

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