

The Impact of Pranayama on Mental Health Disorders in Young Individuals

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NEWS

The Role of Pranayama in Managing Mental Health Disorders Among Youth Individuals

Mental health disorders are conditions that impact a person's thoughts, emotions, mood, and behaviour, often causing distress and interfering with daily life. In 2019, approximately one in eight people worldwide-around 970 million individuals-were living with a mental disorder, with anxiety and depression being the most common. The COVID-19 pandemic in 2020 further exacerbated these conditions, leading to a sharp rise in cases.^[1]

Chronic stress plays a significant role in mental health deterioration, primarily due to the overactivation of the Hypothalamic-Pituitary-Adrenal (HPA) axis, which results in increased levels of the stress hormone cortisol.^[2] As concerns over mental health continue to rise, especially among adolescents and young adults, researchers and wellness experts are increasingly exploring non-pharmacological interventions that provide relief without side effects.

One promising approach is Pranayama, a yogic breathing practice that has been shown to alleviate mood disorders like anxiety and depression in young individuals.^[3,4] Studies suggest that Pranayama exerts its benefits through the vagus nerve, influencing key brain regions such as the solitary nucleus, thalamus, limbic system, and prefrontal cortex. This practice is believed to enhance parasympathetic nervous system activity, which helps regulate stress hormones and increases GABA inhibition from the prefrontal cortex and insula to the amygdala. This, in turn, reduces amygdala hyperactivity, a key driver of stress and emotional distress.^[5-7]

A recent meta-analysis of randomized controlled trials on breathwork and mental health found that individuals who practiced controlled breathing techniques for eight weeks experienced significant improvements in emotional regulation, stress resilience, and overall well-being. Participants reported

lower anxiety and depressive symptoms, indicating that Pranayama could serve as a cost-effective and accessible tool for mental health management.^[8]

Recognizing these benefits, various schools and universities in Western countries have begun incorporating Pranayama sessions into their wellness programs. Educators and wellness professionals believe that breathing exercises enhance oxygenation to the brain, regulate the autonomic nervous system, and promote a sense of calm, ultimately contributing to improved mood stability and emotional well-being.

VIEWS

Why pranayama could be a game-changer for youth mental health?

The modern world presents numerous challenges for young individuals, including academic stress, social pressures, and digital overstimulation. These factors contribute to a surge in mood disorders, and the increasing reliance on pharmaceutical interventions often comes with side effects and accessibility challenges, making it imperative to explore sustainable and accessible solutions.

Pranayama, an ancient practice rooted in yogic traditions, offers a scientifically backed, natural method for managing stress, anxiety, and depression. The fact that it influences the vagus nerve and key brain regions involved in emotional regulation highlights its potential as a holistic and effective therapy. Unlike conventional treatments, it is cost-effective, accessible, and free from side effects, making it an attractive option for individuals seeking alternative or complementary mental health interventions.

Pranayama holds great promise as a natural approach to improving mental health, but it is most effective when combined with other evidence-based strategies such as mindfulness, and healthy lifestyle habits. To ensure its widespread adoption, trained instructors and greater scientific awareness are needed to implement it effectively. While further large-scale studies would help strengthen the evidence, current research suggests that incorporating Pranayama into daily routines can be a powerful tool for young individuals struggling with mood disorders.

As awareness of mental health continues to grow, Pranayama may soon become a widely recommended practice for emotional well-being. Educational institutions play a crucial role in this



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movement by integrating breathwork into wellness programs, equipping students with lifelong skills to manage stress and build resilience. This proactive approach is especially important in the post-pandemic era, where mental health challenges among young adults have escalated.

Ultimately, the increasing recognition of Pranayama reflects a positive shift in mental health care, one that embraces a balanced blend of modern science and ancient wisdom to promote holistic well-being.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

REFERENCES

1. World Health Organization. Mental Disorders. World Health Organization. 2022. www.who.int/news-room/fact-sheets/detail/mental-disorders.
2. McGinn MA, Pahng AR. Pathophysiology of affective disorders: functional interaction of stress hormones and hippocampal excitation. *J Neurophysiol*. 2017;117(2):477-9.
3. Sharma VK, Trakroo M, Subramaniam V, Rajajeyakumar M, Bhavanani AB, Sahai A. Effect of fast and slow pranayama on perceived stress and cardiovascular parameters in young health-care students. *Int J Yoga*. 2013;6:104-10. 10.4103/0973-6131.113400
4. Novaes MM, Palhano-Fontes F, Onias H, Andrade KC, Lobão-Soares B, Arruda-Sanchez T, Kozasa EH, Santaella DF, de Araujo DB. Effects of yoga respiratory practice (bhastrika pranayama) on anxiety, affect, and brain functional connectivity and activity: A randomized controlled trial. *Front Psych*. 2020;21:11:467.
5. Brown RP, Gerbarg PL. Sudarshan kriya yogic breathing in the treatment of stress, anxiety, and depression: Part I-Neurophysiologic model. *J Altern Complementary Med*. 2005;11:189-201.
6. Brown RP, Gerbarg PL, Muench F. Breathing practices for treatment of psychiatric and stress-related medical conditions. *Psychiatr Clin North Am*. 2013;36:121-40.
7. Kavitha N, Pal P, Pal GK, Bharadwaj B, Nanda N. Effects of slow breathing exercises on cardiac autonomic functions in anxiety disorder-A randomised control trial. *Ann Neurosci*. 2024.
8. Fincham GW, Strauss C, Montero-Marin J, *et al.* Effect of breathwork on stress and mental health: A meta-analysis of randomised-controlled trials. *Sci Rep*. 2023;13:432.

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