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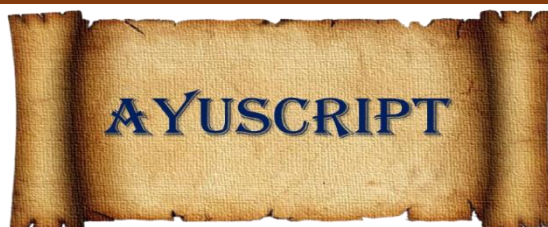
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यन्कल्पेन शरीरं समकल्पयन् ॥१॥ विश्वकर्मोणमाहूय पुरीहाटकानि
 र्मेना ॥ तत्र खोडशसहस्रस्त्रीणामेव च वराधिकम् ॥११॥ भवभानिसनो ज्ञानि
 यो मध्ये च कल्पयन् ॥ परिज्ञानतर्कवेचनासामो गायकल्पयन् ॥१२॥ या
 यानो गृह्णास्तत्र यद्दुपेचाशतकोटयः ॥ अन्यपि बहुवैशोकावसंनिधिगत
 राः ॥१३॥ यन्निर्विद्युत्सुक्तैश्च सुन्दरैश्च दृश्यते ॥ सवाङ्मिन्प्रसूनायो पु
 त्रयुयस्य विद्युते ॥१४॥ यथापि नीरमासाद्य तन्मनस्कतया च सः ॥ सना जि
 स्तपस्तेपस्वयं मुदिष्टपुष्टिमाका ॥१५॥ धनैरिस्वने म्मस्वयं स्वदुक्ता व
 नः ॥ प्रसन्नो भयवाच्यनोजितपुरस्थितः ॥१६॥ सना जिनापि तुष्टावदृष्टा देवैर्द
 ाकरयन् ॥ निजोराशनमस्तुक्तं नमस्तु सर्वतो मुखः ॥१७॥ विश्वव्यापिन्नमस्तुक्त
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International Journal for Empirical Research in Ayurveda

“Role of *Bhramari Pranayama* in *Chittodvega* (Test Anxiety): A Review Study” Bhoi N.

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ABSTRACT:

Introduction: In the modern educational era, students experience significant pressure due to parental and societal expectations. The fear of falling behind in an increasingly competitive examination environment makes them more susceptible to anxiety and stress. In Ayurveda, anxiety and stress are referred to as *Chittodvega* and are classified under *Manasika Vikaras*. Stress has become a widespread concern among students, often beginning as soon as examination dates are announced, which hampers their ability to study and prepare effectively. Therefore, it is essential to support students in maintaining a calm and focused mindset during this period. Although various psychotherapies and strategies are available for managing test anxiety, *Bhramari Pranayama* has also shown effectiveness in individuals experiencing such conditions.

Methods: A structured literature review was conducted using classical *Ayurvedic* texts, including *Charaka Samhita*, *Sushruta Samhita*, *Ashtanga Hridaya*, and *Hatha Yoga*, along with electronic databases such as PubMed, Scopus, and Web of Science. Studies published between 2000 and 2025 were included if they investigated Ayurvedic interventions, particularly *Bhramari Pranayama*. Both clinical and preclinical studies were analysed.

Results: Ayurvedic literature describes *Chittodvega* as a *Manas Roga* caused by the vitiation of *Rajo* and *Tamo gunas*, disturbances in *Manovaha Strotas*, and imbalance of *Prana Vata*. Evidence suggests that Ayurvedic interventions may influence the hypothalamic–pituitary–adrenal (HPA) axis, regulate neurotransmitters, and reduce oxidative stress.

Discussion: Ayurveda emphasizes addressing the root cause of disorders through *Satvavajaya Chikitsa* (psychotherapy), *Daivavyapashraya Chikitsa* (spiritual therapies), and *Yuktivyapashraya Chikitsa* (rational therapies). These approaches show parallels with modern psychotherapeutic, pharmacological, and mindfulness-based interventions.

Conclusion: Ayurveda offers a promising integrative approach for managing anxiety disorders through *Bhramari Pranayama*. Future research should focus on standardization, exploration of underlying mechanisms, and the development of integrative clinical protocols.

Key words: *Chittodvega*, *Bhramari Pranayama*, Anxiety Disorder.

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Introduction:

Ayurveda and Yoga are among the oldest systems of healing and holistic life management. However, in today's highly competitive world, these fundamental practices are often overlooked, making individuals more susceptible to stress, anxiety, and depression. In Ayurveda, anxiety or stress is referred to as *Chittodvega*, which is categorized under Manasika Vikaras¹. The term *Chittodvega* is derived from two components: Chitta (mind) and *Udvega* (anxiety), collectively denoting a state of disturbance characterized by fear, anxiety, and restlessness².

Stress has emerged as a significant concern among students, particularly during examinations. Exams serve as critical milestones in a student's academic journey, often influencing future career opportunities. However, the pressure associated with examinations can adversely affect performance, thereby impacting academic progress. Exam stress manifests through a range of emotional and physiological responses occurring before or during examinations, including heightened arousal, tension, physical discomfort, excessive worry, fear of failure, and catastrophic thinking³.

This condition is commonly referred to as test anxiety, which involves intense worry, apprehension, and discomfort either in anticipation of or during an examination. Such anxiety creates substantial barriers to effective learning and performance⁴. Research indicates that elevated levels of emotional distress are directly associated with reduced academic achievement and increased dropout rates^{4,5,6}. Furthermore, test-related anxiety may lead to broader negative consequences, affecting students' behavioural, emotional, and social development, as well as their self-perception and attitudes toward education⁷.

Studies have shown that students with high levels of test anxiety score approximately 12 percentile points lower than their peers

with lower anxiety levels^{8,9,10}. Test anxiety is prevalent among student populations worldwide and has been extensively studied in educational and psychological research^{11,12}.

Material and Methods:

Databases searched: Web of science, PubMed, Shodhaganga, Ayush research portal, Google scholar, Scopus.¹³

Keywords used: Chittodveg, Bhramari Pranayama, Anxiety Disorder¹⁴.

Inclusion criteria:

- 1) Classical Ayurvedic References.
- 2) Review articles, clinical trials, pharmacological studies on Ayurvedic interventions in anxiety.
- 3) Articles published between 2000-2025¹⁵.

Exclusion criteria:

- 1) Case reports without scientific validation.
- 2) Articles unrelated to Ayurveda or anxiety.
- 3) Non peer reviewed studies¹⁶.

Types of studies reviewed:

Ayurvedic classical references, Experimental studies, Systematic reviews, Integrative clinical models and Randomized controlled trials¹⁷.

OBSERVATION AND RESULT**1. Ayurvedic Concept of Chittodvega:**

Chittodvega is described in *Ayurveda* as a *Manas Roga* (mental disorder) resulting from the vitiation of *Rajas* and *Tamas*—the two psychological *doshas* responsible for emotional imbalance.

Prana Vata, which governs higher mental functions such as cognition, memory, and emotional regulation, when disturbed, manifests as anxiety, palpitations, restlessness, and instability of mind.

The vitiation (*dushti*) of *Manovaha Strotas* leads to impaired sensory perception, disturbed thought processes, and emotional dysregulation.

Additionally, impairment of *Agni* (digestive/metabolic fire) and the accumulation of *Ama* (metabolic toxins) play a crucial role in the development of psychosomatic symptoms associated with anxiety.

2. Symptomatology (Ayurveda and Modern Perspective)

Ayurvedic Perspective:

The condition is characterized by symptoms such as *bhaya* (fear), *chittodvega* (mental agitation), *anidra* (insomnia), excessive worry, palpitations, and fatigue.

Modern Psychiatric Perspective:

These manifestations correlate with conditions like Generalized Anxiety Disorder (GAD), panic disorder, social anxiety disorder, and specific phobias. Common symptoms include tachycardia, sweating, restlessness, excessive worry, and heightened cognitive arousal.

Epidemiological studies indicate that the prevalence of test anxiety ranges from 25% to 40% among students, highlighting its significant impact on academic performance and mental well-being¹⁸.

3. Mechanism of Bhramari Pranayama in reducing chittodvega (Test Anxiety):

Bhramari Pranayama (humming bee breathing) exerts a profound calming effect on the mind and neurophysiological systems, thereby helping to reduce *Chittodvega* (anxiety). The gentle humming sound produced during *Bhramari Pranayama* creates vibrations that resonate throughout the cranial cavity and brain. These vibrations are perceived by the cerebral cortex and transmitted to the hypothalamus, which plays a central role in regulating the neuroendocrine system. Through its influence on the pituitary gland, the hypothalamus helps maintain hormonal balance. Additionally, it modulates both the sympathetic and parasympathetic divisions of the autonomic nervous system, promoting systemic homeostasis and harmony.

Bhramari Pranayama is associated with the generation of gamma brain waves, which are linked to positive emotional states, enhanced cognitive functioning, and a sense of well-being. The practice of slow, controlled breathing combined with a soothing humming sound stimulates the vagus nerve, thereby enhancing

parasympathetic activity. This leads to a reduction in heart rate, decreased stress response, and alleviation of anxiety-related symptoms¹⁹.

From a classical yogic perspective, as described in *Hatha Yoga* texts, there exists a close relationship between *Prana* (vital energy) and *Manas* (mind). Regulation of *Prana* through *Pranayama* results in stabilization of mental activity. When *Prana* becomes steady, the mind also attains a state of calmness and concentration (*Chitta sthirata*). *Bhramari Pranayama* can also be understood as a form of self-induced sound therapy. The prolonged chanting of the “M” sound activates higher mental functions such as *Chintya* (thinking), *Vicharya* (analysis), *Uhya* (hypothesis), and *Kalpna* (imagination). It aids in regulating the functions of *Indriyas* (sense organs) and enhances cognitive faculties such as *Tarka* (logical reasoning) and *Hitahita Vichara* (discriminative judgment), which are governed by *Buddhi*.

Furthermore, the auditory vibrations stimulate the cochlea and may contribute to reduced central nervous system excitability. This promotes relaxation and decreases negative emotional responses, thereby helping in conditions like anxiety and insomnia. Thus, *Bhramari Pranayama* acts through a combined mechanism of breathing regulation and auditory stimulation, making it a highly effective intervention for reducing stress, anxiety, and mental agitation. Compared to music therapy alone, it offers a more integrated approach by simultaneously influencing physiological, neurological, and psychological pathways²⁰.

Standard Operating Procedure (SOP) for Bhramari Pranayama:

The following step-by-step procedure is adapted from classical yogic texts (*Muktibodhananda Saraswati & Satyānanda*, 2011)²¹:

1) Adopt a Comfortable Posture:

Sit in a comfortable meditative posture such as *Padmasana* (Lotus Pose), *Sukhasana* (Easy Pose), or *Siddhasana*

(Auspicious Pose). Keep the spine erect, shoulders relaxed, and hands resting on the knees. Close the eyes and maintain awareness of normal breathing to achieve initial relaxation.

2) Relax the Body and Senses:

Relax all facial muscles and maintain a gentle upward alignment of the neck. Keep the eyes closed and breathe naturally through both nostrils, allowing the body to settle into a calm state.

3) Adopt Mudra (Shanmukhi Mudra Preparation):

Form *Dhyana Mudra* initially. Then raise the hands to the face

Close the ears using the thumbs

Place the index and middle fingers lightly over the eyes

Rest the remaining fingers near the nose or lips

This helps reduce external sensory input (sound and vision), thereby enhancing internal awareness and concentration.

4) Inhalation (Puraka):

Inhale slowly and deeply through both nostrils, ensuring smooth and controlled breathing.

5) Exhalation with Humming Sound (Bhramari):

While exhaling slowly, produce a soft, steady humming sound resembling that of a bee ("Mmmmm....."), keeping the mouth closed. Focus on the vibration generated in the throat and head region, especially near the soft palate.

6) Awareness During Practice:

Observe the gentle contraction of the chest and abdomen during exhalation. Maintain a rhythmic, smooth, and continuous humming sound.

7) Internalization and Silence:

After complete exhalation, remain still with eyes closed and experience the internal resonance of the sound. This phase of silence enhances mental calmness and concentration.

8) Repetition:

Inhale again and repeat the process. Perform at least 5 rounds initially, gradually increasing the duration and

number of rounds as per individual capacity.

9) Completion and Relaxation:

Bhramari Pranayama is ideally practiced at the end of a yoga session. After completing the practice, lie down in *Savasana* (Corpse Pose) to allow complete physical and mental relaxation, thereby restoring equilibrium between body and mind^{22,23}.

Contraindications of Bhramari Pranayama:

These are only a few safety measures to take when performing *Bhramari Pranayama*. If you have a migraine, it's best to avoid it. However, you can practice yoga under the supervision of an instructor while keeping your eyes open.

It is best to perform *Bhramari Pranayama* for a shorter period of time if you have a cardiac condition. It is possible to lessen the buzzing sound that makes hmmm.

It is best to perform this exercise on an empty stomach. It is best to produce the sound slowly and deliberately to prevent chest and lung pressure²⁴.

Discussion:

*Acharya Charaka*²⁵ explains three types of therapies for physical and mental disorders:

1. *Daivavyapashraya* - Spiritual therapy / faith healing
2. *Yuktivyapashraya* - Rational therapy
3. *Sattvavajaya* - Psychotherapy.

Bhramari Pranayama is ideally practiced after completing yogic postures and, when performed regularly for an adequate duration, provides significant benefits for emotional, mental, and physical well-being. The practice involves a self-induced humming sound that closely resembles *mantra* repetition, thereby promoting internal awareness and mental tranquillity. The breathing pattern in *Bhramari*—characterized by prolonged exhalation and relatively shorter inhalation—alters the normal respiratory rhythm and produces a notable impact on physiological processes.

Regular practice of *Bhramari Pranayama* for approximately 5–10 minutes has been shown to induce subjective experiences of mental refreshment, relaxation, and a sense of blissfulness. In some individuals, it may facilitate a transition into a meditative state, enhancing concentration and inner calm²⁶.

From a therapeutic perspective, *Bhramari Pranayama*²⁷:

Reduces stress, anxiety, and emotional agitation

Promotes mental clarity and improves focus

Helps in calming the nervous system through parasympathetic activation

Supports better sleep and reduces symptoms of insomnia

Enhances overall psychological well-being
Thus, *Bhramari Pranayama* can be regarded not only as a breathing technique but also as an effective meditative practice, integrating respiratory control with sound vibration to achieve holistic balance of body and mind.

Conclusion:

Chittodvega, as described in *Ayurveda*, can be closely correlated with test anxiety, reflecting similarities in both symptomatology and underlying psychological disturbances.

The prevalence of test anxiety is steadily increasing in the present competitive educational environment, significantly affecting students' mental health and academic performance.

Major contributing factors include last-minute preparation, negative past experiences, pressure from parents and teachers, self-imposed expectations, feelings of inferiority, and various *Manasika Hetus* (psychological causative factors). Additionally, unhealthy lifestyle practices and improper daily routines act as important predisposing factors.

Students at crucial stages of their academic and professional development are particularly vulnerable to experiencing heightened levels of test anxiety.

Non-pharmacological interventions such as *Bhramari Pranayama* offer a holistic approach by integrating breathing regulation, sound vibration, and mental focus, thereby helping in the management of *Chittodvega* and improving overall psychological well-being²⁸.

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