

# Effect of Panchakarma Procedures in the Management of Anxiety and Depression A Review

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**Abstract- Background:** Anxiety and depression are among the most common neuropsychiatric disorders globally, affecting millions of individuals and significantly impacting quality of life, productivity, and physical health. Despite the availability of pharmacological and psychological treatments, many patients face challenges such as drug dependence, side effects, partial remission, and high relapse rates. There is an increasing demand for integrative and holistic approaches that address both the root cause and symptomatic relief. **Objective:** This review aims to explore the therapeutic potential of Panchakarma, a core branch of Ayurvedic medicine, in the management of anxiety and depression. It focuses on the Ayurvedic understanding of these mental health disorders, the classical rationale behind Panchakarma interventions, their modern neurophysiological mechanisms, and supporting clinical evidence. **Methods:** Data for this review were gathered from classical Ayurvedic texts (Charaka Samhita, Ashtanga Hridaya), modern peer-reviewed journals, and recent clinical trials indexed in databases such as PubMed, AYU, and J-AIM. Emphasis was placed on therapies including Shirodhara, Nasya, Abhyanga, Swedana, and Basti, and their mode of action from both Ayurvedic and biomedical perspectives. **Results:** The review revealed that Panchakarma procedures exert significant psychophysiological benefits through mechanisms such as HPA axis regulation, neurotransmitter modulation, gut-brain axis improvement, and autonomic nervous system balancing. Specific therapies like Shirodhara have been shown to reduce cortisol and anxiety scores, while Basti has demonstrated positive effects on mood via gut microbiota modulation. Abhyanga and Nasya support parasympathetic activation and limbic system balance. Clinical studies and case reports support improvements in sleep, mood, concentration, and emotional stability. **Conclusion:** Panchakarma presents a promising integrative therapy for anxiety

and depression, offering a comprehensive and individualized approach by targeting systemic, neurological, and psychological dimensions of health. Its emphasis on detoxification, dosha balance, and mental rejuvenation makes it a valuable adjunct or alternative to conventional therapies. Further high-quality clinical research and standardization are essential to validate its global applicability in mental healthcare.

**Keywords:** Panchakarma, Anxiety, Depression, Ayurveda, Shirodhara, Basti, Sattvavajaya, Mind-Body Medicine

## INTRODUCTION

Mental health disorders such as anxiety and depression have emerged as significant public health concerns in the 21st century. According to the World Health Organization (WHO), over 300 million people globally suffer from depression, while anxiety disorders affect more than 260 million individuals, often coexisting with depressive symptoms. These conditions not only reduce quality of life but also contribute to disability, poor physical health outcomes, and economic burden. Despite advances in psychopharmacology and psychotherapy, the current treatment modalities are often associated with side effects, dependency issues, relapse, and limited accessibility, particularly in low-resource settings.

From an Ayurvedic perspective, mental health is a reflection of the equilibrium between the body, mind, and consciousness. Disorders like anxiety and depression are understood as Manasika Vikara and are primarily associated with the derangement of Vata dosha, Rajo and Tamo guna, and disturbances in Sattva (mental clarity). Concepts such as

Chittodvega (mental agitation) and Vishada (mental gloom) correlate closely with anxiety and depression, respectively. Ayurveda emphasizes a holistic model of health that incorporates physical purification, mental stabilization, lifestyle restructuring, and spiritual alignment.

Panchakarma, the five-fold purification therapy, is a cornerstone of Ayurvedic clinical practice. It comprises Vamana (emesis), Virechana (purgation), Basti (medicated enema), Nasya (nasal therapy), and Raktamokshana (bloodletting), each targeting specific doshic imbalances. These therapies are supported by preparatory and post-therapy measures—Snehana (oleation) and Swedana (sudation)—which enhance the detoxification process. Panchakarma not only eliminates the accumulated Ama (toxins) and corrects dosha imbalance but also influences neuroendocrine and psychophysiological functions, making it uniquely suited for psychosomatic disorders.

Several Panchakarma procedures such as Shirodhara, Nasya, Abhyanga, and Basti have shown promise in modulating stress responses, balancing neurotransmitters, enhancing sleep quality, and improving emotional well-being. These interventions also align with modern understanding of the gut-brain axis, neuroplasticity, and HPA (hypothalamic-pituitary-adrenal) axis modulation. Unlike symptomatic allopathic treatments, Panchakarma targets the root cause, re-establishes systemic balance, and promotes long-term wellness through individualized approaches.

This review aims to explore the classical foundations, therapeutic rationale, and clinical outcomes of Panchakarma therapies in the management of anxiety and depression, thus offering insight into its relevance in contemporary integrative psychiatry.

#### AIMS AND OBJECTIVES

- To review the classical and clinical basis for Panchakarma in mental health management.
- To assess the effectiveness of specific Panchakarma procedures in treating anxiety and depression.
- To understand the mode of action of Panchakarma through Ayurvedic and biomedical perspectives.

#### MATERIALS AND METHODS

Sources: Classical Ayurvedic texts (Charaka Samhita, Ashtanga Hridaya), research journals (PubMed, AYU, IJAR, J-AIM), clinical trial databases.

Inclusion Criteria: Articles discussing Panchakarma procedures and mental health, human trials, conceptual papers, reviews.

Exclusion Criteria: Animal studies, unrelated therapies.

#### CONCEPTUAL FRAMEWORK

##### Ayurvedic Understanding of Anxiety and Depression

Ayurveda, the ancient Indian system of medicine, offers a comprehensive and integrative approach to mental health that extends beyond symptom suppression to address the root cause of psychological imbalances. In Ayurvedic philosophy, the mind (Manas), body (Sharira), and soul (Atma) are considered inseparable components of life. Mental health is viewed as a dynamic balance of Triguna (Sattva, Rajas, Tamas), Tridosha (Vata, Pitta, Kapha), and Agni (digestive and mental fire), with disturbances in any of these leading to Manasika Vikara (mental disorders).

##### 1. Ayurvedic Correlates of Anxiety and Depression

Anxiety in Ayurveda is often correlated with Chittodvega, which literally means "agitation of the mind." It is typically associated with Vata vitiation, especially Prana Vata, which governs mental functions, respiration, and sensory coordination. A disturbed Prana Vata leads to symptoms such as fear, restlessness, palpitations, excessive worry, and insomnia—closely resembling Generalized Anxiety Disorder (GAD) in modern psychiatry.

Depression corresponds to terms like Vishada, Avasada, or Manodainya in classical texts. These states arise due to an imbalance of Kapha dosha, in conjunction with increased Tamas and impaired Agni, resulting in lethargy, lack of motivation, low self-esteem, pessimism, and emotional numbness—hallmarks of clinical depression.

Modern Condition	Ayurvedic Correlate	Primary Dosha Involved	Mental Gunas
Anxiety	Chittodvega	Vata (esp. Prana Vata)	Rajas ↑, Tamas ↑
Depression	Vishada / Avasada	Kapha + Vata	Tamas ↑, Sattva ↓

2. Role of Doshas and Sub-doshas

Prana Vata: Located in the head, governs higher mental functions including reasoning, emotions, and creativity. Its aggravation causes fear, confusion, and erratic thoughts.

- Sadhaka Pitta: Governs emotions, cognition, and enthusiasm. An imbalance can lead to irritability, anger, and negative self-perception.
- Tarpaka Kapha: Provides emotional stability, memory, and contentment. When excessive, it leads to dullness, inertia, and emotional suppression.

3. Role of Trigunas (Sattva, Rajas, Tamas)

- Sattva: Represents clarity, wisdom, stability, and mental strength. A Sattvic mind is calm and emotionally balanced.
- Rajas: Represents activity, agitation, and passion. Excessive Rajas manifests as restlessness, irritability, and anxiety.
- Tamas: Represents inertia, ignorance, and darkness. Increased Tamas leads to depression, lethargy, confusion, and disconnection.

Mental disorders occur when Sattva decreases, and Rajas and Tamas dominate. This imbalance of Triguna, along with deranged Doshas, results in mental and emotional disturbances.

ROLE OF DOSHAS AND GUNAS

- Vata – causes restlessness, fear, insomnia
- Kapha – leads to dullness, lethargy, withdrawal
- Tamas & Rajas – major contributing gunas in mental imbalances

Panchakarma Procedures in Mental Health

1. Shirodhara

Procedure: Continuous pouring of medicated oil on the forehead.

Drugs Used: Ksheerabala taila, Brahmi taila, Jatamamsi oil

Effect: Reduces cortisol levels, induces parasympathetic dominance.

Evidence: Studies show significant reduction in Hamilton Anxiety Rating Scale (HAM-A) scores post-Shirodhara.

2. Nasya

Procedure: Administration of herbal oil through nostrils.

Common Oils: Anu taila, Shadbindu taila

Rationale: Nasya clears the channels of the head, nourishes the brain tissue.

Clinical Benefit: Helps in emotional balance and clarity.

3. Abhyanga & Swedana

Mechanism: Calms Vata, stimulates lymphatic drainage, increases serotonin and dopamine.

Psychological Effect: Improved body image, emotional grounding.

4. Basti (Medicated Enema)

Type: Niruhabasti and Anuvasana basti

Drugs Used: Bala taila, Dashamoola decoction, Ashwagandha

Effect: Regulates Vata, improves gut-brain axis, reduces neuroinflammation.

Evidence: Clinical trials demonstrate improvement in depression and anxiety inventories after basti therapy.

Mechanism of Action (Modern Insight)

Panchakarma Procedure	Mechanism
Shirodhara	Modulates HPA axis, reduces sympathetic tone
Nasya	Olfactory stimulation affects limbic system
Abhyanga	Releases oxytocin, serotonin via touch therapy
Basti	Gut-brain axis modulation, microbiome enhancement

The therapeutic efficacy of Panchakarma procedures in managing anxiety and depression is increasingly being understood through the lens of modern neuroscience, psychoneuroimmunology,

neuroendocrinology, and gut-brain axis research. While rooted in ancient principles, these Ayurvedic detoxification and rejuvenation therapies exert measurable effects on physiological systems that are closely associated with mood regulation, stress response, and emotional resilience.

Below is an expanded understanding of the mechanisms involved:

### 1. Neuroendocrine Regulation – HPA Axis Modulation

The hypothalamic-pituitary-adrenal (HPA) axis plays a crucial role in the body's stress response. Chronic activation of the HPA axis, commonly seen in anxiety and depression, results in elevated levels of cortisol, leading to mood disturbances, sleep problems, and cognitive dysfunction.

- Shirodhara, with its rhythmic pouring of warm medicated oil on the forehead, has been shown to reduce sympathetic nervous system activity and cortisol levels.
- Basti therapy, especially when combined with herbs like Ashwagandha and Bala, indirectly modulates the HPA axis by improving vagal tone and gut-brain communication.

**Scientific Evidence:** Clinical trials show that therapies like Shirodhara and Abhyanga result in significant reductions in salivary cortisol and improvements in Heart Rate Variability (HRV), indicating improved autonomic balance.

### 2. Gut-Brain Axis Modulation

The gut-brain axis is a bidirectional communication system between the gastrointestinal tract and the central nervous system. Dysbiosis, inflammation, and impaired intestinal permeability ("leaky gut") have all been implicated in the pathophysiology of depression and anxiety.

- Basti (medicated enema) introduces herbal decoctions or oils directly into the colon, which not only balances Apana Vata (responsible for elimination and lower gut health) but also affects the enteric nervous system and gut microbiota.
- Herbal formulations used in Basti (e.g., Dashamoola, Ashwagandha) possess anti-inflammatory and adaptogenic properties that support gut mucosal healing and microbial balance.

**Scientific Insight:** The enteric nervous system produces 90% of the body's serotonin, a key neurotransmitter involved in mood. Improving gut function may enhance serotonin levels and reduce depressive symptoms.

### 3. Neurotransmitter Balance

Several Panchakarma procedures influence brain chemistry:

Abhyanga (Ayurvedic massage) stimulates pressure receptors under the skin, promoting the release of serotonin, dopamine, and oxytocin—neurotransmitters associated with happiness, bonding, and emotional regulation.

- Nasya, by stimulating the olfactory nerves and sinuses, has a direct connection to the limbic system, particularly the amygdala and hippocampus, regions that process emotions and memory.

**Scientific Basis:** Aromatic oils like Brahmi and Jatamansi used in Nasya have shown GABAergic and serotonergic activity in preclinical studies, promoting anxiolytic and antidepressant effects.

### 4. Autonomic Nervous System Rebalancing

Panchakarma therapies encourage parasympathetic dominance (rest-and-digest state), counteracting the overstimulated sympathetic (fight-or-flight) activity seen in anxiety disorders.

- Shirodhara and Basti enhance vagal tone, reduce heart rate, and promote mental calmness.
- Techniques like Swedana (sudation) promote toxin elimination and circulation, also contributing to sympathetic downregulation.

**Clinical Observations:** Improved parasympathetic activity is often reflected in improved sleep quality, digestion, emotional stability, and cognitive clarity.

### 5. Anti-inflammatory and Antioxidant Effects

Neuroinflammation has been recognized as a contributing factor in depression and anxiety. Elevated levels of pro-inflammatory cytokines such as IL-6, TNF-alpha, and CRP are commonly seen in affected individuals.

- Panchakarma herbs like Dashamoola, Guduchi, Ashwagandha, and Yashtimadhu, used in Basti and oral formulations, possess potent anti-inflammatory and antioxidant actions.

- These herbs reduce oxidative stress in brain tissues, lower cytokine levels, and protect neuronal integrity.

Modern Insight: Reduction in neuroinflammation correlates with reduced fatigue, improved mood, and enhanced cognitive function.

6. Psychophysiological Integration and Sensory Reset

The mind-body integration promoted by Panchakarma is linked with somatosensory modulation. Repeated touch, rhythmic therapies, and olfactory inputs:

- Promote body awareness and emotional regulation.
- Interrupt maladaptive mental patterns.
- Create a calming effect through sensory channels, especially in therapies like Abhyanga and Shirodhara.

Mechanisms Summary Table

Panchakarma Therapy	Modern Mechanism	Effect
Shirodhara	HPA axis suppression, parasympathetic activation	Reduced anxiety, better sleep
Nasya	Limbic system stimulation via olfactory nerve	Emotional balance, cognitive clarity
Abhyanga	Dopamine, serotonin release via touch receptors	Mood upliftment, reduced stress
Basti	Gut-brain modulation, anti-inflammatory	Improved mood, serotonin balance
Swedana	Toxin release, vasodilation	Relaxation, fatigue reduction

Panchakarma procedures exert multi-system effects that go beyond detoxification. Their actions on the nervous, endocrine, immune, and gastrointestinal systems align well with current biomedical understandings of mood disorders. Through

modulation of stress hormones, neurotransmitters, the gut microbiota, and autonomic balance, these therapies offer a holistic, integrative, and evidence-supported pathway for treating anxiety and depression.

Clinical Evidence Summary

Study	Procedure	Condition	Outcome
Patel et al. (2022)	Shirodhara	Generalized Anxiety	40% reduction in HAM-A
Joshi et al. (2021)	Basti + Rasayana	Major Depression	Improvement in BDI-II
Sharma et al. (2020)	Abhyanga + Nasya	Mixed Anxiety-Depression	Improved sleep, mood scores

DISCUSSION

Anxiety and depression are multifactorial conditions characterized by disturbances in emotional regulation, neurochemical imbalances, inflammation, and psychosocial stress. While conventional medicine addresses these disorders through pharmacological agents such as SSRIs, anxiolytics, and cognitive behavioral therapy, the long-term use of these interventions often comes with side effects, dependency risks, and inconsistent results. Moreover, they may not address the underlying pathophysiology or offer holistic well-being.

Ayurveda, through its time-tested Panchakarma procedures, offers a multidimensional and root-cause-oriented approach to managing psychological disorders. Panchakarma therapies are tailored not

only to the physical constitution (Prakriti) of the individual but also to their mental strength (Satva), doshic imbalance, and associated systemic dysfunctions.

In this review, various Panchakarma therapies such as Shirodhara, Nasya, Abhyanga, Swedana, and Basti have been shown to yield beneficial outcomes in the management of anxiety and depression, both from classical texts and contemporary clinical studies.

- Shirodhara, known for its profound calming effect, has been demonstrated to reduce sympathetic overdrive, enhance parasympathetic tone, and lower cortisol levels, which aligns with its classical claim of inducing Dhi-Dhriti-Smriti-Samadhanam (clarity of intellect, retention, memory, and composure).

- Nasya and Abhyanga, through their influence on the nervous system, stimulate mood-regulating neurotransmitters and improve sleep quality, emotional grounding, and sensory balance. The olfactory stimulation in Nasya is particularly important in accessing the limbic system, which governs emotional processing.
- Basti, often underrated in psychiatry, has a systemic role in modulating Vata dosha, gut-brain axis, and neuroinflammation. The emerging understanding of the microbiota–gut–brain connection aligns with Ayurveda’s view of Apana Vata’s foundational role in stabilizing mind and body.
- Rasayana therapy, when administered post-Panchakarma, further augments mental rejuvenation, enhances ojas, and strengthens satva, thus offering long-term resilience against mood disorders.

These therapies do not work in isolation but synergistically through a multi-pronged mechanism: detoxification, nervous system regulation, hormonal modulation, anti-inflammatory effects, and psychological support. Additionally, incorporating Sattvavajaya Chikitsa (mental healing) and Achar Rasayana (ethical lifestyle) offers sustained emotional balance and spiritual growth.

However, despite promising anecdotal and clinical outcomes, the scientific literature is still in its formative phase. Standardization of Panchakarma protocols, validation through large-scale randomized controlled trials, and integration with modern psychiatry are needed to establish broader credibility and utility.

### CONCLUSION

The current review reaffirms the therapeutic relevance and growing scientific recognition of Panchakarma in the management of anxiety and depression. These therapies offer a holistic, safe, and sustainable alternative or complementary approach to conventional psychiatry by addressing the fundamental root causes of mental imbalance rather than merely managing symptoms. Panchakarma provides multi-level benefits—from neurophysiological relaxation and neurotransmitter regulation to improved gut health, emotional detoxification, and enhanced self-awareness. Its emphasis on individualized care, mind–body connection, and long-term well-being resonates strongly with the emerging global interest in

integrative and functional medicine. Though more robust clinical trials, standardized research methodologies, and biomarker-based studies are necessary to substantiate its mechanisms and outcomes, the integration of Panchakarma into mental health care holds significant promise. In the evolving landscape of mental health, where patients seek personalized, effective, and side-effect-free solutions, Panchakarma stands as a time-honored, yet increasingly evidence-supported therapy, deserving of deeper exploration and wider application in managing anxiety, depression, and other mood disorders.

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