

# Ayurvedic Herbal Management of Depression and Anxiety with Special Focus on Ashwagandha (*Withania Somnifera*): A Review

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**Index Terms**—Depression and anxiety are among the most widespread mental health conditions, affecting millions worldwide and contributing significantly to social and economic burden. Modern pharmacotherapy, despite its effectiveness, is often limited by side effects, relapse rates, and poor patient adherence. This has intensified interest in traditional systems like Ayurveda, which offers a holistic, individualized approach to mental health through herbal medicines, lifestyle modifications, and mind–body therapies. This review summarizes Ayurvedic principles related to depression and anxiety, highlights key herbal remedies, and focuses on the therapeutic potential of Ashwagandha (*Withania somnifera*)—one of the most researched adaptogenic herbs. Modern pharmacological evidence suggests that Ashwagandha modulates neurotransmitters, stabilizes the hypothalamic-pituitary-adrenal (HPA) axis, reduces cortisol, and enhances neuroprotective and anti-inflammatory mechanisms. Ayurvedic and scientific perspectives together indicate its value as a safe and promising intervention for managing depression and anxiety. The review concludes with limitations of existing research and recommendations for future studies.

## I. INTRODUCTION

Depression and anxiety are major global health disorders characterized by persistent sadness, excessive worry, and cognitive impairment.

Conventional treatments, including antidepressants and anxiolytics, provide relief but are often associated with side effects such as sedation, dependency, weight gain, and withdrawal symptoms. As a result, many individuals seek integrative approaches that combine conventional and traditional systems of medicine.

Ayurveda, the traditional medical system of India, conceptualizes mental health as an interaction between the mind (*Omanas*), body (*sharira*), and spirit (*atma*). Mental disorders such as *vishada* (depressive states) and *chittodvega* (anxiety-like states) are viewed as imbalances of the *trigunas* (*Sattva*, *Rajas*, *Tamas*) and *doshas* (*Vata*, *Pitta*, *Kapha*). Herbal medicines, particularly *medhya rasayanas*, play a central role in restoring mental balance. Among these, Ashwagandha (*Withania somnifera*) has gained significant global attention as a potent adaptogen with anti-anxiety and antidepressant properties.

This review aims to explore Ayurvedic concepts related to mental health, discuss major herbs used for depression and anxiety, and provide an in-depth analysis of Ashwagandha based on both classical Ayurvedic knowledge and modern scientific findings.

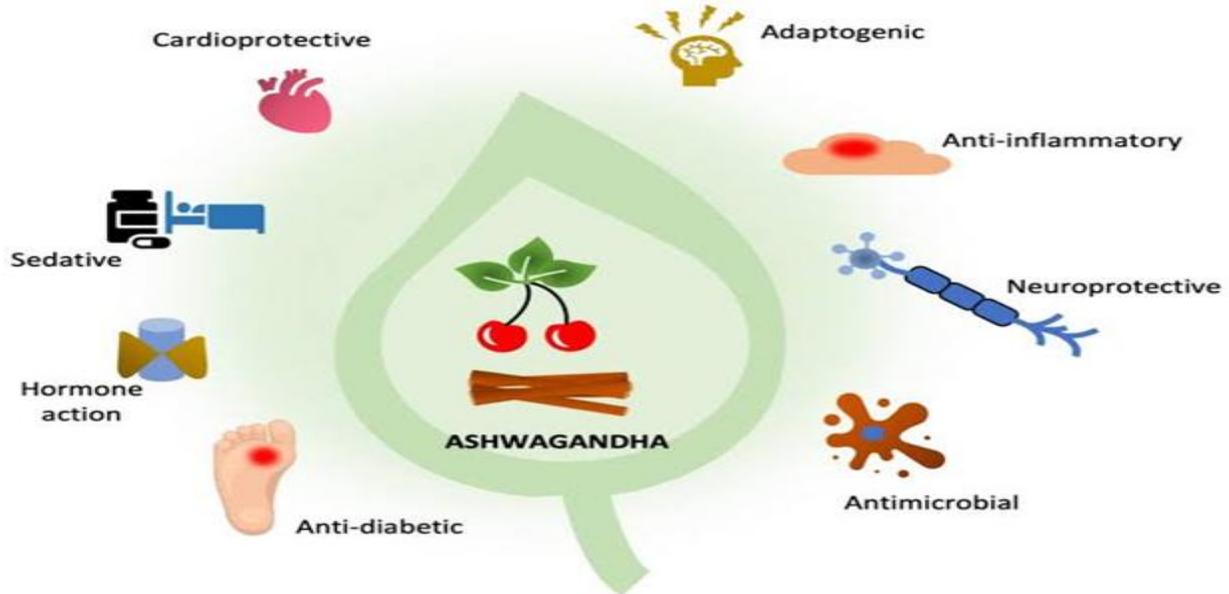


FIG 1:- APPLICATION OF ASHWAGANDHA

### Ayurvedic Concepts of Mental Health

#### 1. The Role of Trigunas

Ayurveda describes three fundamental mental qualities:

- Sattva – clarity, harmony, stability
- Rajas – activity, restlessness
- Tamas – inertia, heaviness

Anxiety is considered an increase of rajas with disturbed vata, while depression is linked to excess tamas often with kapha imbalance.

#### 2. Dosha Imbalance and Mind

- Vata aggravation → fear, worry, insomnia, anxiety
- Pitta imbalance → irritability, agitation
- Kapha aggravation → lethargy, sadness, reduced motivation

#### 3. Pathogenesis (Samprapti)

Ayurveda explains that mental toxins (ama), weak ojas (vital essence), and disturbed manovaha srotas (mental channels) contribute to psychiatric disorders.

### Ayurvedic Herbal Approach to Depression and Anxiety

Ayurvedic management relies heavily on medhya rasayana herbs—brain-nourishing and rejuvenating substances. Major herbs include:

#### 1. Brahmi (*Bacopa monnieri*)

Improves cognition, reduces anxiety, enhances memory, calms the nervous system.

#### 2. Shankhpushpi (*Convolvulus pluricaulis*)

Known for anxiolytic, calming, and memory-enhancing properties.

#### 3. Jatamansi (*Nardostachys jatamansi*)

Possesses antidepressant, antistress, and neuroprotective action.

#### 4. Vacha (*Acorus calamus*)

Traditionally used for depression, low mood, and mental fog.

#### 5. Mandukaparni (*Centella asiatica*)

Reduces stress and improves mental clarity and sleep.

These herbs are often used in combination, enhancing therapeutic synergy for mood stabilization.

### Ashwagandha: Ayurvedic Background and Traditional Use

#### 1. Botanical Profile

- Scientific name: *Withania somnifera*
- Family: Solanaceae
- Parts used: Root (primarily), leaves and berries occasionally

- Ayurvedic category: Rasayana and Medhya Rasayana
- 2. Traditional Ayurvedic Properties
  - Rasa (taste): Bitter, sweet
  - Guna (qualities): Heavy, unctuous
  - Virya (potency): Heating
  - Vipaka (post-digestive effect): Sweet
  - Doshic action: Balances Vata and Kapha
  - Classical indications: stress, weakness, insomnia, low mood, fatigue, neuromuscular diseases.



FIG 2: - BOTANICAL DESCRIPTION OF ASHWAGANDHA

3. Ayurvedic Formulations Containing Ashwagandha
- Ashwagandha Churna
  - Ashwagandharishta
  - Ashwagandhadi Lehyam
  - Medhya Rasayana combinations

Traditionally, it is used to strengthen ojas, stabilize the mind, and enhance resilience against stress and exhaustion.

**Phytochemistry of Ashwagandha**

Ashwagandha contains numerous bioactive constituents, including:

- Withanolides (withaferin A, withanolide D) – key therapeutic molecules
- Alkaloids – somniferine, anaferine
- Saponins – anti-stress compounds
- Flavonoids and glycosides – antioxidant activity

The root is the most commonly used part due to its high content of withanolides.

**Mechanisms of Action in Depression and Anxiety**

1. Ayurvedic Mechanisms

- Enhances ojas, promoting emotional stability
- Nourishes manovaha srotas (mental channels)
- Promotes sattva guna (clarity and balance)
- Pacifies vata, reducing anxiety and hyperactivity
- Acts as a rasayana, rejuvenating brain tissues

2. Modern Pharmacological Mechanisms

Scientific research supports several biological mechanisms:

i. Modulation of the HPA Axis

Ashwagandha reduces excessive cortisol, the stress hormone, thereby stabilizing physiological stress pathways.

ii. GABAergic Effects

It enhances GABA receptor activity, producing calming and anti-anxiety effects.

iii. Serotonergic and Dopaminergic Modulation

Ashwagandha influences serotonin and dopamine levels, contributing to antidepressant activity

iv. Neuroprotective and Antioxidant Action

- Reduces oxidative stress
- Inhibits neuronal inflammation

- Protects neurons from degenerative changes
- Promotes neurogenesis and synaptic plasticity (BDNF regulation)

v. **Adaptogenic Activity**

Helps the body adapt to emotional and physical stress, restoring balance.

Evidence from Preclinical and Clinical Studies

1. **Preclinical Evidence**

Animal studies show that Ashwagandha:

- Reduces anxiety-like behavior in stress-induced models
- Shows antidepressant activity similar to standard drugs
- Protects hippocampal neurons from stress damage
- Normalizes stress biomarkers and inflammatory mediators

2. **Clinical Evidence**

Modern human trials consistently demonstrate:

i. **Reduction in Anxiety**

- Significant decreases in anxiety scores (HAM-A, BAI)
- Lowered cortisol levels
- Improved sleep, reduced irritability

ii. **Improvement in Depression**

- Positive effects on depression scales (MADRS, BDI)
- Enhanced mood stability and motivation

iii. **Enhanced Stress Tolerance**

- Improved resilience and quality of life
- Reduced fatigue, increased energy and calmness

iv. **Dosage in Studies**

Common dosage ranges:

- 250–600 mg/day standardized extract (root)
- 3–5 g/day root powder (traditional form)

**Safety, Dosage, and Toxicity**

1. **Safety Profile**

Ashwagandha is generally safe with mild and infrequent side effects:

- Gastrointestinal discomfort
- Drowsiness (rare)
- Headache (rare)

2. **Precautions**

- Use cautiously in hyperthyroidism
- Avoid during pregnancy unless supervised

- Possible interactions with sedatives or thyroid medication

3. **Recommended Dosage**

- Root powder: 3–6 g daily
- Standardized extract: 300–600 mg daily
- With milk or ghee enhances absorption according to Ayurveda



Fig 3: - Ashwagandha

**Comparative Analysis**

1. **Versus Other Ayurvedic Herbs**

Ashwagandha is:

- Stronger as an adaptogen
- More researched for cortisol reduction
- Effective for both anxiety and depression, while some herbs act mainly on one

2. **Compared to Modern Medication**

Ashwagandha:

- Has fewer side effects
- Is non-addictive
- Improves sleep and overall vitality
- Works gradually rather than immediately
- May serve as an adjunct rather than a replacement

**Integrative Ayurvedic Management**

1. **Lifestyle and Diet**

- Warm, grounding foods for Vata balance
- Avoid caffeine, alcohol, heavy processed foods
- Include milk, ghee, nuts, whole grains, spices like turmeric and cinnamon

2. **Yoga and Pranayama**

- Anulom Vilom
  - Bhramari
  - Shavasana
  - Hatha Yoga and Yin Yoga for calming the nervous system
3. Meditation
- Mindfulness meditation
  - Om chanting
  - Yogic relaxation practices
4. Panchakarma (Optional)
- Shirodhara for anxiety
  - Abhyanga (oil massage) for Vata balance
  - Nasya with medicated oils
- Combining Ashwagandha with these holistic interventions amplifies therapeutic benefits.

#### Limitations of Current Research

- Not all trials use standardized extracts
- Variation in dosages and formulations
- Lack of long-term safety studies
- Limited research in children, pregnant women, and elderly
- Need for larger randomized controlled trials

### III. FUTURE DIRECTIONS

- Standardization of withanolide content
- Long-term comparative studies with conventional drugs
- Exploration of Ashwagandha combinations with other herbs
- Genomic and metabolomic research on individualized responses
- Clinical evaluation in specific disorders (OCD, PTSD, postpartum depression)

### IV. CONCLUSION

Ayurvedic medicine provides a comprehensive, multi-dimensional approach to managing depression and anxiety, emphasizing balance of mind, body, and lifestyle. Among the many herbs described, Ashwagandha stands out as a powerful adaptogenic and neuroprotective agent with both classical support and growing scientific evidence. Its ability to modulate the HPA axis, enhance neurotransmitter function, and

improve overall stress resilience makes it a promising natural intervention. When integrated with Ayurvedic diet, lifestyle modifications, and mind–body practices, Ashwagandha offers a safe, holistic, and effective strategy for improving mental well-being. Further high-quality research will help clarify optimal dosing, long-term effects, and its role in integrative mental health care.

### REFERENCE

- [1] Pandit, S., Srivastav, A. K., Sur, T. K., Chaudhuri, S., Wang, Y., & Biswas, T. K. (2024). Effects of *Withania somnifera* Extract in Chronically Stressed Adults: A Randomized Controlled Trial. *Nutrients*, *16*(9), 1293. DOI: 10.3390/nu16091293. ([MDPI][1])
- [2] Chandrasekhar, K., Kapoor, J., & Anishetty, S. (2012). An investigation into the stress-relieving and pharmacological actions of an ashwagandha (*Withania somnifera*) extract: A randomized, double-blind, placebo-controlled study. *Indian Journal of Psychological Medicine*, *34*(3), 255–262. (This is a classical RCT for stress / anxiety.) ([PubMed][2])
- [3] Akhgarjand, C., Asoudeh, F., Bagheri, A., Kalantar, Z., Vahabi, Z., Shab-Bidar, S., Rezvani, H., & Djafarian, K. (2022). Does Ashwagandha supplementation have a beneficial effect on the management of anxiety and stress? A systematic review and meta-analysis of randomized controlled trials. *Phytotherapy Research*, *36*(11), 4115–4124. DOI: 10.1002/ptr.7598. ([PubMed][3])
- [4] Safety and efficacy of *Withania somnifera* for anxiety and insomnia: systematic review and meta-analysis. *Phytotherapy Research*, (2024). DOI: see article. ([PubMed][4])
- [5] A Standardized *Withania somnifera* Root Extract with Piperine Alleviates the Symptoms of Anxiety and Depression by Increasing Serotonin Levels: A Double-Blind, Randomized, Placebo-Controlled Study. *Journal of Phytotherapy Research / Planta Medica* (depending on the publisher). DOI: as per PubMed. ([PubMed][2])
- [6] Effects of *Withania somnifera* Extract in Chronically Stressed Adults: 8-week RCT of 125/250/500 mg/day. *Nutrients*, *16*(9), 1293. ([PubMed][5])

- [7] The effect of *Withania somnifera* on mental health symptoms in individuals with mental disorders: systematic review and meta-analysis. *BMC Complementary Medicine and Therapies* / *PMC*. ([PMC][6])
- [8] Effect of *Withania somnifera* on BDNF gene expression (neurtin, NARP, BDNF exon III) in a depression model: *International Journal of Applied and Basic Medical Research*. ([LWW Journals][7])
- [9] Chitra Devi, K., Bohare, A., Yadav, D. K., Shrivastava, R., & Nivetha, L. (2024). Ashwagandha as an Adaptogen: Evidence-Based Role in Alleviating Stress and Anxiety. *Journal of Neonatal Surgery*. DOI: 10.52783/jns.v14.3326. ([J Neonatal Surgery][8])
- [10] Biopsychological Effects of Ashwagandha (*Withania somnifera*) in Athletes and Healthy Individuals: A Systematic Review. *MDPI Journal* (e.g., *Nutrients* or similar). ([MDPI][9])
- [11] Exploring the Therapeutic Potential of Ashwagandha (*Withania somnifera*) in Alleviating Stress and Anxiety: Review of Clinical & Ayurvedic Evidence. *Journal of Pharmaceutical Research International*, *37*(4), 116–126. (Mondal et al.) ([IMSEAR][10])
- [12] Standardized Ashwagandha Extract Significantly Reduces Markers of Stress in Participants with Generalized Anxiety Disorder. *Heliyon*, *10*, e36885, 2024. ([Natural Health Research][11])
- [13] The effect size of Ashwagandha in reducing anxiety and stress across RCTs: from the systematic review by Akhgarjand et al. (2022) (already noted), but useful to cite for effect size / dose-response. ([PubMed][3])
- [14] There are studies showing neuroprotective action of withanolides, but *you may cite* general adaptogen-mechanism reviews like the above “Ashwagandha as an Adaptogen” (Chitra Devi et al.) for mechanistic support. ([J Neonatal Surgery][8])
- [15] On safety: in the meta-analysis by the “Safety and efficacy ... for anxiety & insomnia” review, side-effects are discussed. ([PubMed][4])
- [16] The *International Journal of Applied and Basic Medical Research* article (effect on neurtin, NARP, BDNF) can support your neurogenesis / neuroprotective mechanism section. ([LWW Journals][7])
- [17] The RCT by Pandit et al. (2024) demonstrates the modulation of the HPA axis (cortisol) via extract usage. ([MDPI][1])
- [18] Use the “Biopsychological Effects in Athletes” review (MDPI) to support effects on stress resilience, mood, and psychophysiology. ([MDPI][9])
- [19] (Adaptogen theory) The “Exploring the Therapeutic Potential ...” paper (Mondal et al.) is good to support classical Ayurvedic plus modern adaptogen view. ([IMSEAR][10])
- [20] (Clinical neuropsychiatric) The meta-analysis in PMC (*Withania somnifera* in mental disorders) supports your “clinical evidence” section on anxiety, depression, and sleep. ([PMC][6])
- [21] [https://www.mdpi.com/2072-6643/16/9/1293?utm\\_source=chatgpt.com](https://www.mdpi.com/2072-6643/16/9/1293?utm_source=chatgpt.com) “Effects of *Withania somnifera* Extract in Chronically Stressed Adults: A Randomized Controlled Trial”
- [22] [https://pubmed.ncbi.nlm.nih.gov/37878284/?utm\\_source=chatgpt.com](https://pubmed.ncbi.nlm.nih.gov/37878284/?utm_source=chatgpt.com) “A Standardized *Withania somnifera* (Linn.) Root Extract with Piperine Alleviates the Symptoms of Anxiety and Depression by Increasing Serotonin Levels: A Double-Blind, Randomized, Placebo-Controlled Study – PubMed”
- [23] [https://pubmed.ncbi.nlm.nih.gov/36017529/?utm\\_source=chatgpt.com](https://pubmed.ncbi.nlm.nih.gov/36017529/?utm_source=chatgpt.com) “Does Ashwagandha supplementation have a beneficial effect on the management of anxiety and stress? A systematic review and meta-analysis of randomized controlled trials – PubMed”
- [24] [https://pubmed.ncbi.nlm.nih.gov/39083548/?utm\\_source=chatgpt.com](https://pubmed.ncbi.nlm.nih.gov/39083548/?utm_source=chatgpt.com) “Safety and efficacy of *Withania somnifera* for anxiety and insomnia: Systematic review and meta-analysis – PubMed”
- [25] [https://pubmed.ncbi.nlm.nih.gov/38732539/?utm\\_source=chatgpt.com](https://pubmed.ncbi.nlm.nih.gov/38732539/?utm_source=chatgpt.com) “Effects of *Withania somnifera* Extract in Chronically Stressed Adults: A Randomized Controlled Trial – PubMed”
- [26] [https://pmc.ncbi.nlm.nih.gov/articles/PMC12569615/?utm\\_source=chatgpt.com](https://pmc.ncbi.nlm.nih.gov/articles/PMC12569615/?utm_source=chatgpt.com) “The effect of *Withania somnifera* (Ashwagandha) on mental health symptoms in individuals with mental

disorders: systematic review and meta-analysis –  
PMC”

- [27] [https://journals.lww.com/ijab/fulltext/2025/01000/effect\\_of\\_withania\\_somnifera\\_on\\_expression\\_of.5.aspx?utm\\_source=chatgpt.com](https://journals.lww.com/ijab/fulltext/2025/01000/effect_of_withania_somnifera_on_expression_of.5.aspx?utm_source=chatgpt.com)  
“International Journal of Applied and Basic Medical Research”
- [28] [https://www.jneonatsurg.com/index.php/jns/article/view/3326?utm\\_source=chatgpt.com](https://www.jneonatsurg.com/index.php/jns/article/view/3326?utm_source=chatgpt.com)  
“Ashwagandha as an Adaptogen: Evidence-Based Role in Alleviating Stress and Anxiety | Journal of Neonatal Surgery”
- [29] [https://www.mdpi.com/2813-0413/4/3/24?utm\\_source=chatgpt.com](https://www.mdpi.com/2813-0413/4/3/24?utm_source=chatgpt.com)  
“Biopsychological Effects of Ashwagandha (Withania somnifera) in Athletes and Healthy Individuals: A Systematic Review”
- [30] [https://imsear.searo.who.int/items/c6b6525c-12fb-4169-a37f-ba0410477375?utm\\_source=chatgpt.com](https://imsear.searo.who.int/items/c6b6525c-12fb-4169-a37f-ba0410477375?utm_source=chatgpt.com)  
“Exploring the Therapeutic Potential of Ashwagandha (Withania somnifera) in Alleviating Stress and Anxiety”
- [31] [https://www.naturalhealthresearch.org/wp-content/uploads/2025/01/Standardized-Ashwagandha-Extract-Significantly-Reduces-Markers-of-Stress-in-Participants-with-Generalized-Anxiety-Disorder.pdf?utm\\_source=chatgpt.com](https://www.naturalhealthresearch.org/wp-content/uploads/2025/01/Standardized-Ashwagandha-Extract-Significantly-Reduces-Markers-of-Stress-in-Participants-with-Generalized-Anxiety-Disorder.pdf?utm_source=chatgpt.com) “Heliyon 10 (2024) e36885”