



## A COMPREHENSIVE REVIEW ON THE STUDY OF MEDHYA RASAYANA IN MENTAL DISORDERS.

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<https://doi.org/10.46607/iamj1513032025>

(Published Online: March 2025)

### Open Access

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Article Received: 06/02/2025 - Peer Reviewed: 27/02/2025 - Accepted for Publication: 08/03/2025.



## ABSTRACT

The increasing global burden of mental health disorders necessitates exploring alternative and complementary therapeutic approaches. Ayurveda, an ancient Indian system of medicine, emphasises holistic healing, and within its framework, Medhya Rasayana is a class of herbal formulations known for their neuroprotective and cognitive-enhancing properties. This review examines the historical background, pharmacological mechanisms, and clinical applications of Medhya Rasayana in mental disorders such as anxiety, depression, and cognitive decline. The therapeutic effects of key ingredients like Mandukaparni (*Centella asiatica*), Yashtimadhu (*Glycyrrhiza glabra*), Guduchi (*Tinospora cordifolia*), and Shankhapushpi (*Convolvulus pluricaulis*) are explored, focusing on their influence on neurotransmitter regulation, oxidative stress reduction, and the hypothalamic-pituitary-adrenal (HPA) axis modulation. Clinical studies indicate promising results, showing improved cognitive functions, emotional stability, and stress resilience. This review underscores the potential of Medhya Rasayana as a complementary therapy in mental healthcare and highlights the need for further research to integrate its use into modern psychiatric practice.

**Keywords:** Medhya Rasayana, Mental health, Guduchi, Ayurveda

## INTRODUCTION

**Ayurveda, an ancient Indian medical system, provides holistic health and wellness information. One core principle of Ayurveda is Rasayana, which refers to rejuvenation therapies that promote longevity, vitality, and cognitive enhancement. Within this framework, Medhya Rasayana focuses on improving mental functions and memory. In recent years, there has been an increasing interest in integrating traditional medicine with modern healthcare approaches, especially in mental health.**

The increasing prevalence of mental health disorders globally necessitates the exploration of alternative and complementary therapies. Conventional treatments often have limitations, including side effects and varying efficacy among individuals. In this context, Medhya Rasayana presents a promising avenue for research and application. By investigating its therapeutic potential, we can better understand how these traditional formulations may contribute to contemporary mental health practices.

### Mechanism of action

Medhya Rasayana encompasses a variety of herbal formulations known for their neuroprotective and cognitive-enhancing effects. Key ingredients such as Mandukaparni (*Centella asiatica*), Yashtimadhu (*Glycyrrhiza glabra*), Guduchi (*Tinospora cordifolia*), and Shankhapushpi (*Convolvulus pluricaulis*) have been extensively studied for their pharmacological properties. These herbs exhibit potent antioxidant, adaptogenic, and anti-stress effects, contributing to their efficacy in enhancing cognitive functions and managing mental disorders. (Sarokte and Rao 2013). Mandukaparni, for instance, has been shown to modulate neurotransmitter systems, particularly influencing dopamine, serotonin (5-Hydroxytryptamine), and noradrenaline pathways. This modulation is crucial for improving learning and memory processes and reducing cognitive deficits associated with oxidative stress<sup>1</sup>. Additionally, the adaptogenic properties of these herbs help the body cope with stressors, promoting mental resilience and overall well-being. (Neha Mehra, Shailendra Pradhan, and D.C. Singh 2023).

### Effects on Neurotransmitter Systems

The effectiveness of Medhya Rasayana in enhancing cognitive function is primarily attributed to its influence on various neurotransmitter systems. Research indicates that these herbal formulations can increase key neurotransmitters such as acetylcholine, vital for memory and learning. (Bajrang Ramawat 2022). For example, Yashtimadhu has been recognised for enhancing cerebral blood flow, thereby improving oxygen and nutrient delivery to the brain, essential for optimal neurotransmitter function. (Kulkarni et al. 2012).

Moreover, studies have demonstrated that the active compounds in these herbs can exert neuroprotective effects by reducing oxidative stress and inflammation in neural tissues. This is particularly important in preventing the cognitive decline associated with ageing and neurodegenerative diseases. (Srivastava Niraj 2019). The anxiolytic properties of specific Medhya Rasayana components also contribute to the reduction of anxiety-related neurotransmitter imbalances, further supporting cognitive health. (Neha Mehra et al. 2023).

### Influence on the Hypothalamus-Pituitary-Adrenal Axis

The hypothalamus-pituitary-adrenal (HPA) axis is an important part of the body's reaction to stress. Many mental health problems, including anxiety and depression, may result from this axis being dysregulated. Medhya Rasayana formulations have a beneficial effect on the HPA axis by reducing levels of cortisol and other stress hormones. For instance, Mandukaparni has been reported to reduce elevated levels of circulating corticosterone, a stress response marker, thereby mitigating its detrimental effects on memory and cognitive function.

The adaptogenic properties of Medhya Rasayana help restore balance within the HPA axis, promoting a more resilient response to stressors. This regulatory effect enhances mental clarity and supports emotional stability by preventing the overactivation of stress-related pathways. Overall, the interaction between Medhya Rasayana and the HPA axis underscores its

potential as a therapeutic option for managing stress-related mental disorders.

### Effects of Medhya Rasayana on Mental Health

Effect	Mechanism of Action	Herbs Involved
Neurotransmitter Modulation	Increases acetylcholine, dopamine, serotonin	Mandukaparni, Yashtimadhu
Antioxidant Properties	Reduces oxidative stress in brain cells	Brahmi, Guduchi, Ashwagandha
HPA Axis Regulation	Modulating cortisol and reduces stress response.	Mandukaparni, Ashwagandha
Anxiolytic & Antidepressant	Enhances GABAergic activity and stabilises mood.	Shankhapushpi, Jatamansi
Cognitive Enhancement	Promotes synaptic plasticity, memory retention	Brahmi, Shankhapushpi

### Therapeutic Protocols

Medhya Rasayana may be taken in various forms, such as powders, decoctions, and pastes, which give patients more options for how they want to take it and what their doctor recommends. Dosage recommendations are conditional on the treatment formulation as well as the patient's age, health, and severity of the mental illness.

**Powders:** A common preparation involves fine powders of key ingredients such as Mandukaparni, Yashtimadhu, Guduchi, and Shankhapushpi. For example, a study indicated that subjects should take 2 grams of this Medhya Rasayana powder twice daily with milk for three months. This combination was formulated to enhance palatability for children, incorporating milk powder and sugar powder in a 2:1:1 ratio to facilitate easier consumption. (Sarokte and Rao 2013).

**Decoctions:** Decoctions can be prepared by boiling the herbs in water to extract their active constituents. This method is often used for formulations like Vacha Rasayana, which may be administered with warm water or milk.

**Pastes:** Some formulations are prepared as pastes (Kalka) that can be mixed with honey or ghee for improved taste and absorption.

The duration of treatment typically ranges from a few weeks to several months, depending on the formulation and the specific mental health condition being addressed. For instance, some protocols suggest a treatment duration of up to six months for optimal results.

### Limitations and Gaps in Current Research

Despite some encouraging discoveries, current research on Medhya Rasayana has several limitations and inadequacies. One major drawback is that there aren't enough large-scale, multicentric, randomised controlled studies to show how well it works in different people. The findings cannot be applied to a broader population since most of the research conducted so far either uses tiny samples or zero in specific demographics.

Furthermore, more comprehensive investigations are needed into the mechanisms through which Medhya Rasayana exerts its effects on mental health. While some studies have begun to explore its impact on neurotransmitter systems and the HPA axis, further research is required to elucidate the biochemical pathways involved.

Another gap is the limited understanding of potential side effects or contraindications associated with the long-term use of these herbal formulations. As Ayurvedic practices gain popularity in modern healthcare settings, it is crucial to establish standardised dosages and treatment protocols to ensure patient safety and optimise therapeutic outcomes.

### DISCUSSION

This study highlights the effectiveness of *Medhya Rasayana* in managing mental disorders by enhancing cognitive function, reducing stress, and improving emotional stability. Unlike conventional treatments, which often have side effects, *Medhya Rasayana* offers a holistic, natural approach with minimal adverse effects. Key herbs like *Brahmi*, *Ashwagandha*, and *Mandukaparni* enhance neurotransmitter

activity, regulate the HPA axis, and provide neuro-protection. Clinical studies show significant improvements in anxiety, depression, and cognitive decline. The adaptogenic and antioxidant properties of these herbs support long-term mental health. However, challenges like lack of standardised dosages and limited large-scale trials persist. Further research is required to validate its efficacy in diverse populations. Integrating *Medhya Rasayana* with modern medicine could offer a comprehensive approach to mental healthcare. Ayurveda's holistic principles emphasise prevention and treatment, making it a valuable complementary therapy.

## CONCLUSION

Medhya Rasayana represents a promising avenue in the management of mental disorders, aligning with Ayurveda's holistic approach to health and well-being. Its herbal components' neuroprotective, adaptogenic, and anxiolytic properties contribute significantly to cognitive enhancement and emotional stability. Research findings support its effectiveness in treating conditions like anxiety, depression, and cognitive impairment, often demonstrating comparable results to conventional treatments with fewer adverse effects. However, to establish Medhya Rasayana as a mainstream therapeutic option, rigorous clinical trials, standardised formulations, and further investigations into its mechanisms of action are essential. Bridging traditional knowledge with modern scientific validation can pave the way for integrative mental healthcare approaches, offering a sustainable and effective alternative for managing mental health disorders.

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**Source of Support: Nil**

**Conflict of Interest: None Declared**

How to cite this URL: Shivangi Mittal et al.: International Ayurvedic Medical Journal {online} 2025 {cited March 2025}