



Behavioral Problems in Children and the Role of Medhya Rasayana: An Ayurvedic Review

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Behavioral problems in children are increasingly recognized as a major public health concern due to their impact on learning, socialization, and long-term psychological well-being. These issues, including Attention-Deficit Hyperactivity Disorder (ADHD), Oppositional Defiant Disorder (ODD), Conduct Disorder, and anxiety-related behaviors, result from complex interactions between genetic, neurobiological, psychosocial, and environmental factors. Ayurveda provides a unique perspective by attributing these behavioral disturbances to imbalances in Doshas, Gunas (Sattva, Rajas, Tamas), impaired Manasika Bala, and depletion of Ojas. Medhya Rasayana, a group of rejuvenative herbs, are emphasized in classical texts for enhancing intellect, cognition, memory, and emotional regulation. Recent clinical and preclinical studies provide evidence for the efficacy of *Bacopa monnieri*, *Centella asiatica*, *Convolvulus pluricaulis*, *Withania somnifera*, *Tinospora cordifolia*, and others in improving cognitive performance and adaptive behaviors in children. This review integrates classical Ayurvedic wisdom with modern scientific evidence to provide a comprehensive perspective on the role of Medhya Rasayana in managing behavioral disorders in children.

Keywords: Behavioral disorders, Children, Ayurveda, Medhya Rasayana, ADHD, Cognition, Ojas

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Introduction

Childhood is a critical period of growth and development, laying the foundation for physical, mental, and emotional health. Behavioral problems, if unaddressed, can adversely affect academic achievement, social interactions, and long-term health outcomes. Globally, the World Health Organization (WHO) estimates that 10–20% of children and adolescents experience mental health disorders, many manifesting as behavioral issues.[1]

In India, the ICMR Mental Health Survey reported that approximately 13% of children aged 5–15 years suffer from mental or behavioral disorders.[2]

Behavioral disorders are multifactorial. Genetics, neurodevelopmental changes, parenting styles, socio-environmental stressors, and excessive screen exposure are significant contributors.[3,5] Modern psychiatry uses the DSM-5 for diagnosing ADHD, ODD, Conduct Disorder, and other behavioral conditions.[6]

Ayurveda offers a holistic perspective, viewing behavioral health as a balance of *Doshas*, *Manas*, *Atma*, and *Indriyas*. Disturbances in this lead to impaired *Manasika Bala* and aberrant behavior.[7]

Medhya Rasayana are emphasized for promoting intellect, memory, emotional stability, and balanced cognition.[8,9]

This review explores modern and *Ayurvedic* perspectives on childhood behavioral problems & examines role of *Medhya Rasayana*.

Epidemiology of Behavioral Problems in Children

Behavioral disorders are prevalent worldwide and increasing in incidence. ADHD affects 5–7% of children globally[10], ODD and Conduct Disorder are present in 2–10%.[11] In India, ADHD prevalence in school-aged children ranges from 1.6–17.9%.[12]

Excessive screen time is strongly associated with hyperactivity, irritability, and social difficulties.[13] Adolescence is a vulnerable period due to rapid neurodevelopmental & psychosocial changes.[14,15]

Untreated behavioral disorders may persist into adulthood, resulting in academic underachievement, antisocial behavior, and psychiatric conditions such as depression or substance use disorder.[16]

Table 1: Classification of Behavioral Problems

Disorder	DSM-5 Features	Ayurvedic Correlation
ADHD	Inattention, hyperactivity, impulsivity	Rajasika predominance, impaired Dhi, Dhriti, Smriti
ODD	Defiance, irritability, argumentative	Aggravated Rajas, Tamasic influence on mind
Conduct Disorder	Aggression, rule-breaking, social norm violations	Vitiated Vata and Pitta, impaired Manasika Bala
Anxiety Disorders	Separation anxiety, phobias, social anxiety	Sattva diminution, Rajas-Tamas imbalance
Learning Disabilities	Dyslexia, dysgraphia, dyscalculia	Weak Dhi, impaired Smriti

Etiopathogenesis

Modern Perspective

Behavioral disorders result from complex interactions of genetic predisposition, neurobiological changes, and environmental factors. Dysregulation in dopaminergic and noradrenergic pathways contributes to ADHD.[17]

Parenting practices, exposure to violence, lack of social support, & excessive digital media exacerbate behavioral problems.[13,18]

Ayurvedic Perspective

Ayurveda attributes behavioral disturbances to imbalance of the three gunas (sattva, rajas, tamas). Excess rajas leads to agitation, impulsivity; excess tamas results in lethargy and poor learning.

Weak *Ojas* leads to emotional instability, while aggravated *Doshas* obstruct normal functioning of *Manovaha Srotas*. Classical verse from *Charaka Samhita* emphasizes the role of *Medhya Rasayana*:

“*Medhyam Smṛtiprajananam Balyam Āyuh Pradam Hitam | Doṣaśāmakam Svasthyam Rasāyanam Cha Medhya Cha ||*”

Meaning: *Medhya Rasayana* promotes intellect, memory, strength, and longevity; it balances *Doshas* and preserves health.

Medhya Rasayana in Ayurveda

Medhya Rasayana are herbs indicated to improve cognition, intellect, and mental stability, acting on *Dhi* (intellect), *Dhriti* (retention) & *Smriti* (memory).

Modern studies confirm their neuroprotective, antioxidant, anxiolytic, and adaptogenic effects.

Table 2: Major *Medhya Rasayana* Drugs

Sanskrit Name	Latin Name	Rasa	Veerya	Vipaka	Indications
Brahmi	Bacopa monnieri	Madhura	Sheeta	Madhura	ADHD, poor memory
Mandukaparni	Centella asiatica	Tikta, Katu	Sheeta	Katu	Hyperactivity, poor attention
Shankhapushpi	Convolvulus pluricaulis	Madhura	Sheeta	Madhura	Learning deficits, restlessness
Guduchi	Tinospora cordifolia	Tikta	Sheeta	Madhura	Behavioral issues with stress
Ashwagandha	Withania somnifera	Katu, Tikta	Ushna	Madhura	Anxiety, aggression
Jatamansi	Nardostachys jatamansi	Tikta, Kashaya	Sheeta	Madhura	ADHD, sleep disturbance
Yashtimadhu	Glycyrrhiza glabra	Madhura	Sheeta	Madhura	Irritability, hyperactivity

Management Approaches

Table 3: *Ayurvedic* Management Approaches

Approach	Details	Expected Outcome
Aushadha (Medhya Rasayana)	Brahmi, Mandukaparni, Shankhapushpi, Guduchi, Ashwagandha, Jatamansi	Improved cognition, emotional stability, reduced hyperactivity
Ahara (Diet)	Sattvic diet: milk, ghee, whole grains, fruits, nuts	Enhances ojas, balances doshas, supports mental development
Vihara (Lifestyle)	Regular sleep, limited screen exposure, Yoga, Pranayama	Improves focus, reduces anxiety, harmonizes gunas
Achara Rasayana (Behavioral training)	Parental counseling, moral education, structured daily routine	Promotes socialization, discipline, emotional regulation

Table 4: Modern Management Approaches

Approach	Details	Indications
Behavioral Therapy	Cognitive Behavioral Therapy (CBT), play therapy, parent training	ADHD, ODD, Conduct Disorder, anxiety disorders
Pharmacological	Stimulants (methylphenidate), antidepressants, anxiolytics	Severe ADHD, anxiety, depression
Educational Interventions	Individualized education plans, remedial teaching	Learning disabilities, attention deficits
Lifestyle Modifications	Physical activity, structured daily routines, screen-time limitation	Hyperactivity, irritability, sleep issues

Recent Research Evidence

Table 5: Clinical Evidence on *Medhya Rasayana*

Study/Author	Population	Intervention	Outcome
Russo & Borrelli, 2005	Children with ADHD	Bacopa monnieri	Improved memory, reduced hyperactivity
Brinkhaus et al., 2000	Psychiatric patients	Centella asiatica	Reduced anxiety, improved cognition
Kulkarni & Verma, 1992	Animal studies	Convolvulus pluricaulis	Enhanced learning, nootropic effect
Chandrasekhar et al., 2012	Healthy adults	Withania somnifera	Stress reduction, improved memory
Joshi & Parle, 2006	Animal studies	Nardostachys jatamansi	Improved learning and memory
Īkōgretim Online, 2021	Children with enuresis	Medhya Rasayana + behavioral therapy	Significant improvement in outcomes

Discussion

Behavioral problems in children emerge from a complex interplay of biological, psychological, and environmental influences. Modern evidence shows that genetic vulnerability, neurotransmitter dysregulation, & neurodevelopmental alterations contribute significantly to conditions such as ADHD, where disruption of dopaminergic & noradrenergic pathways in the prefrontal cortex impairs attention, impulse regulation, and motor control.[17,19] Environmental stressors—including parenting approaches, socio-economic challenges, exposure to violence & increased screen time—further compound these difficulties.[13,18,20] If left untreated, these disorders frequently persist into adolescence and adulthood, often manifesting as poor scholastic performance, interpersonal problems, mood instability, and risk of substance misuse.[16]

Ayurveda provides a parallel framework for understanding behavioral disturbances, attributing them to imbalance in *Doshas* & predominance of *Gunas*. Classical texts state that disturbances in *Dhi* (intellect), *Dhriti* (retention/ mental strength), and *Smriti* (memory), caused by such imbalances, lead to behavioral instability.[7,8] Elevated *Rajas* manifest as restlessness, impulsivity, and aggression, while excess *Tamas* manifests as lethargy, lack of clarity & low motivation. Diminished *Ojas*, seen as the subtle essence sustaining mental & emotional stability, renders child more vulnerable to anxiety, irritability, and stress-related symptoms.

Therapeutically, *Ayurveda* emphasizes rejuvenative herbs collectively known as *Medhya Rasayana*, which aim to enhance cognition, stabilize emotions, and improve overall neuropsychological health. Modern pharmacological research supports these classical claims.

For example, *Bacopa monnieri* (*Brahmi*) has shown benefits in memory, executive functioning & anxiety reduction, including in pediatric populations with ADHD.[21,22] *Centella asiatica* (*Mandukaparni*) exhibits neuroprotective & anxiolytic properties through cholinergic modulation and neuronal regeneration. [23] *Convolvulus pluricaulis* (*Shankhapushpi*) enhances cognitive performance, while *Withania somnifera* (*Ashwagandha*) and *Nardostachys jatamansi* (*Jatamansi*) help in lowering stress hormone levels and promoting emotional regulation.[24–26]

A strength of the *Ayurvedic* model is its integrative approach. Management does not rely solely on herbs, but combines pharmacological (*Aushadhi*), dietary (*Ahara*), lifestyle (*Vihara*), and ethical-behavioral (*Achara Rasayana*) measures. *Sattvic* diets—rich in milk, ghee, fruits, nuts, and whole grains—are thought to nourish *Ojas* and support intellectual growth. Structured lifestyle practices such as *Yoga*, *pranayama*, and regulated sleep have demonstrated measurable benefits in improving attention, reducing anxiety, and normalizing behavioral symptoms in children.[27,28] Alongside, parental guidance and behavioral counseling reinforce emotional resilience and social learning.

Recent studies highlight the synergistic effects of combining *Medhya Rasayana* with behavioral therapies, showing significant improvement in attention, memory, and adaptive functioning.[29] Furthermore, the safety profile of these herbs is favorable, with minimal adverse effects reported in pediatric use when given at appropriate dosages. [30] This contrasts with conventional pharmacotherapy for ADHD and related disorders, where stimulants may induce appetite loss, insomnia, or cardiovascular side effects.

Taken together, these observations point towards a promising integrative model. *Ayurvedic* perspectives complement the neurobiological models of modern psychiatry by providing multidimensional strategies that address both biological mechanisms and environmental influences. Future research should aim at well-designed clinical trials to establish evidence-based protocols, standardize dosage, and ensure long-term safety in pediatric populations.

Conclusion

Behavioral problems in children are a growing public health concern with consequences for academic achievement, social adaptation,

And long-term mental health. Modern research identifies genetic, neurobiological & environmental contributors. *Ayurveda* attributes these disturbances to imbalances in doshas, gunas, impaired *Manasika Bala*, and depleted *Ojas*.

Medhya Rasayana promotes intellectual development, memory retention, emotional stability, and adaptive behavior. Evidence supports the efficacy of *Bacopa monnieri*, *Centella asiatica*, *Convolvulus pluricaulis*, *Withania somnifera*, *Tinospora cordifolia*, and related herbs.

Integrative approaches combining herbal interventions, dietary regulation, lifestyle modifications, and behavioral training provide a holistic framework, targeting both symptoms & underlying imbalances. Further large-scale trials are warranted to standardize dosing, evaluate long-term safety, and explore synergy with conventional therapies, potentially enhancing pediatric mental health care.

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