

AYURVEDIC CONCEPT OF NIDRA AND COGNITIVE FUNCTION: AN INTEGRATIVE REVIEW**Dr. Nupura Kshitij Shinde*¹, Dr. Deepa Kale²**¹P.G Scholar, Kriya Sharir Department, Y.M.T.A.C, Kharghar, Navi-Mumbai 410210.²Guide, Professor & HOD, Kriya Sharir Department, Y.M.T.A.C, Kharghar, Navi-Mumbai 410210.

Article Received on 06 July 206,
Article Revised on 27 July 2026,
Article Published on 01 August 2026,

<https://doi.org/10.5281/zenodo.21696893>

Corresponding Author*Dr. Nupura Kshitij Shinde**

P.G Scholar, Kriya Sharir
Department, Y.M.T.A.C, Kharghar,
Navi-Mumbai 410210.



How to cite this Article: Dr. Nupura Kshitij Shinde*¹, Dr. Deepa Kale² (2026). Ayurvedic Concept Of Nidra And Cognitive Function: An Integrative Review. World Journal of Pharmaceutical Research, 15(15), 957-964.

This work is licensed under Creative Commons Attribution 4.0 International license.

ABSTRACT

Sleep plays a vital role in maintaining cognitive and psychological health. Disturbances in sleep and increasing prevalence of sleep deprivation due to stress, altered lifestyle, and excessive screen exposure have become major health concerns in modern society. Impaired sleep adversely affects memory, attention, learning, and emotional regulation. Modern physiology explains these effects through alterations in circadian rhythm, neuroendocrine balance, and neuronal functioning. In Ayurveda, Nidra is considered one of the Trayopastambha and is essential for maintenance of physical and mental well-being. Nidranasha is described as a causative factor for fatigue, impaired intellect, and disturbed mental functions. This review aims to explore the Ayurvedic concept of Nidra and correlate it with modern understanding of sleep

physiology and cognitive function. The review also highlights the impact of sleep deprivation on cognition and discusses integrative approaches for maintaining healthy sleep and cognitive health.

KEYWORDS: Nidra, Nidranasha, Cognitive Function, Sleep Deprivation, Sleep Physiology, Cognitive Dysfunction, Circadian Rhythm, Manovaha Srotas, Integrative Review.

INTRODUCTION

Sleep is an essential physiological process required for maintenance of physical, mental, and cognitive health. In recent years, increasing psychological stress, excessive screen exposure,

irregular lifestyle, and disturbed daily routines have led to a rise in sleep-related disorders and sleep deprivation. Inadequate sleep adversely affects memory, concentration, learning ability, emotional stability, and overall quality of life. Modern physiology explains these effects through disturbances in circadian rhythm, neuroendocrine imbalance, impaired neuronal restoration, and altered cognitive processing.

In Ayurveda, Nidra is considered one of the Trayopastambha, the three fundamental pillars of life, along with Ahara and Brahmacharya. Proper Nidra is essential for nourishment of the body, mental stability, strength, intellect, and longevity, whereas disturbed sleep or Nidranasha is believed to produce fatigue, mental stress, impaired cognition, and various systemic disorders. Ayurvedic classics describe the role of Doshas, particularly Vata, along with disturbances in Manovaha Srotas and imbalance of Raja and Tama in the manifestation of sleep disturbances and mental dysfunctions. Lifestyle factors such as improper diet, stress, suppression of natural urges, and irregular routines are also considered important causative factors for disturbed sleep.

Cognitive functions including memory, attention, learning, decision-making, and emotional regulation are greatly influenced by the quality and duration of sleep. Several concepts explained in modern sleep physiology show similarities with the Ayurvedic understanding of Nidra and Nidranasha. Therefore, an integrative exploration of Ayurvedic and modern perspectives may provide a better understanding of the relationship between sleep and cognitive health. The present review aims to analyze the Ayurvedic concept of Nidra and correlate it with contemporary knowledge of sleep physiology and cognitive function.

MATERIALS AND METHODS

A review of literature was conducted using classical Ayurvedic texts and contemporary scientific literature related to Nidra, sleep physiology, cognitive function, and sleep deprivation. Relevant articles were identified from databases such as PubMed, Google Scholar, and other scientific sources using keywords including Nidra, Nidranasha, cognitive dysfunction, circadian rhythm, sleep deprivation, and Ayurveda. Classical references describing Nidra, Trayopastambha, Manovaha Srotas, and the role of Doshas in sleep were reviewed from authoritative Ayurvedic texts including Charaka Samhita, Sushruta Samhita, and Ashtanga Hridaya. The collected literature was critically analyzed and correlated to establish an integrative understanding of sleep and cognitive function from both Ayurvedic and modern physiological perspectives.

RESULTS

1. Concept of Nidra in Ayurveda

Ayurveda considers Nidra as one of the Trayopastambha responsible for maintenance of life and health. Acharya Charaka states that happiness, sorrow, nourishment, emaciation, strength, weakness, fertility, infertility, knowledge, ignorance, and even life itself depend upon proper sleep. The reviewed literature indicates that proper Nidra supports both Sharirika and Manasika health and plays an important role in maintenance of cognitive functions such as memory, intellect, and concentration.

2. Nidranasha and Dosha Imbalance

Ayurvedic literature describes Nidranasha as a condition mainly associated with aggravation of Vata Dosha. Increased Rajas along with disturbances in Manovaha Srotas also contribute to disturbed sleep and altered mental functions. Clinical manifestations described in Ayurvedic texts include fatigue, stress, dizziness, body ache, impaired concentration, and mental exhaustion. The literature also suggests that improper lifestyle, psychological stress, excessive thinking, suppression of natural urges, and irregular routines act as important Nidranasha Nidana.

3. Effect of Divaswapna and Disturbed Sleep

The reviewed literature suggests that improper sleep habits including Divaswapna and irregular sleep-wake patterns adversely affect Dosha balance and physiological functioning. Excessive daytime sleep is described to aggravate Kapha Dosha and contribute to Mandagni, heaviness, lethargy, and impaired mental alertness. Disturbed sleep patterns were also found to negatively influence concentration, productivity, and emotional stability.

4. Nidra, Agni and Dhatu Poshana

Ayurvedic literature emphasizes the close relationship between Nidra and Agni. Proper sleep helps maintain balanced Agni and supports Dhatu Poshana, whereas disturbed sleep contributes to Agnimandya and improper nourishment of Dhatus. Impaired Dhatu nourishment ultimately affects physical strength, mental efficiency, and cognitive functioning. The reviewed texts indicate that chronic sleep disturbances may lead to both physical and psychological imbalance through altered metabolic and neurophysiological functioning.

5. Modern Physiology of Sleep and Cognition

Modern physiological literature describes sleep as an active neurophysiological process regulated by circadian rhythm, melatonin secretion, and neuronal recovery mechanisms. Sleep is essential for memory consolidation, learning, emotional regulation, synaptic plasticity, and cognitive processing. Sleep deprivation negatively affects attention span, executive function, reaction time, and behavioral responses. Altered sleep patterns were also associated with increased stress hormones, impaired neuronal restoration, and reduced cognitive performance.

6. Integrative Understanding of Nidra and Cognitive Function

Both Ayurvedic and modern scientific literature emphasize the importance of healthy sleep for maintenance of cognitive and psychological health. The reviewed literature indicates conceptual similarities between Nidranasha described in Ayurveda and cognitive dysfunction associated with sleep deprivation in modern physiology. Integrative approaches including Dinacharya, stress management, meditation, proper sleep hygiene, and balanced lifestyle practices were found beneficial in maintaining healthy sleep and cognitive function.

DISCUSSION

Ayurveda considers Nidra as one of the Trayopastambha, the three fundamental pillars responsible for maintenance of life and health. Among these, Nidra plays a vital role in restoration of physical strength, mental stability, and cognitive efficiency. The reviewed literature suggests that the Ayurvedic understanding of sleep extends beyond simple rest and includes its influence on psychological, neurological, metabolic, and behavioral functioning. Modern scientific literature also recognizes sleep as an active neurophysiological state essential for cognitive processing, neuronal restoration, and emotional regulation.

Acharya Charaka explains the physiological basis of sleep in the following shloka.

यदा तु मनसि क्लान्ते कर्मात्मानः क्लमान्विताः ।

विषयेभ्यो निवर्तन्ते तदा स्वपिति मानवः ॥

This shloka indicates that sleep occurs when the mind and body become fatigued and the senses withdraw from external objects. Ayurveda thus considers Nidra as a natural restorative phenomenon resulting from exhaustion of Manas and Sharira. Modern physiology similarly explains sleep initiation through interaction of sleep-regulating centers in the hypothalamus, brainstem, and reticular activating system. Neurotransmitters such as GABA, serotonin,

melatonin, and adenosine play important roles in initiation and maintenance of sleep. Circadian rhythm regulated by the suprachiasmatic nucleus also contributes significantly to the sleep-wake cycle.

The importance of proper sleep has been described in Charaka Samhita.

निद्रायत्तं सुखं दुःखं पुष्टिः काश्यं बलाबलम् ।

वृषता क्लीबता ज्ञानमज्ञानं जीवितं न च ॥

The above shloka highlights that happiness, nourishment, strength, fertility, intellect, and even life itself depends upon proper Nidra. This indicates the multidimensional role of sleep in maintaining both physical and mental well-being. Adequate sleep contributes to proper functioning of higher cognitive processes such as memory, concentration, learning, and emotional regulation. Modern physiological studies also support the role of sleep in memory consolidation, learning, synaptic plasticity, emotional regulation, and neuronal recovery. REM and NREM sleep are particularly important for cognitive processing, memory integration, and restoration of brain function. Sleep deprivation adversely affects attention span, executive function, reaction time, and behavioral responses.

Ayurvedic literature describes Nidranasha primarily as a Vata predominant condition. Aggravation of Vata Dosha causes instability of mental and sensory functions leading to disturbed sleep. Increased Raja Guna, excessive stress, fear, anxiety, overthinking, suppression of natural urges, and irregular lifestyle are also described as important etiological factors. Disturbances in Manovaha Srotas further contribute to altered mental functioning and impaired cognition. These observations correlate with modern findings where chronic stress, sympathetic overactivity, altered cortisol secretion, and psychological disturbances significantly impair sleep quality and cognitive functioning.

The reviewed literature also emphasizes the role of proper sleep timing and duration. Charaka states.

अकालेऽतिप्रसङ्गाच्च न च निद्रा निषेविता ।

सुखायुषी पराकुर्यात् कालरात्रिरिवापरा ॥

This shloka explains that sleep taken at improper time, in excessive quantity, or in inadequate quantity becomes harmful and adversely affects health and longevity. Ayurveda strongly discourages inappropriate sleep patterns as they disturb Dosha equilibrium and physiological

functioning. Divaswapna has been described as a causative factor for Kapha aggravation, Mandagni, heaviness, lethargy, and impaired mental alertness. In modern physiology, irregular sleep schedules and circadian rhythm disturbances alter hormonal regulation, metabolic balance, and neuronal functioning, ultimately affecting cognition and psychological health.

Ayurveda also explains the close relationship between Nidra, Agni, and Dhatu Poshana. Proper Nidra supports balanced Agni which is essential for digestion, metabolism, and nourishment of Dhatus. Disturbed sleep contributes to Agnimandya and improper Dhatu nourishment, eventually leading to physical weakness, mental fatigue, and impaired cognitive efficiency. Modern scientific literature similarly indicates that sleep deprivation negatively affects metabolic regulation, neuroendocrine balance, immune function, and neuronal recovery processes.

Another important statement regarding proper sleep is described in Charaka Samhita.

सैव युक्ता पुनर्युङ्क्ते निद्रा देहं सुखायुषा ।

पुरुषं योगिनं सिद्ध्या सत्या बुद्धिरिवागता ॥

This shloka signifies that properly regulated Nidra restores the body, promotes longevity, improves mental efficiency, and maintains healthy functioning of both body and mind. Adequate sleep acts as a restorative process necessary for maintenance of cognitive and psychological well-being. Modern research also supports the beneficial role of healthy sleep in emotional stability, memory processing, neurocognitive performance, and overall quality of life.

Thus, the reviewed literature demonstrates significant conceptual similarities between Ayurvedic understanding of Nidra and modern physiological concepts of sleep and cognition. Both systems emphasize the importance of healthy sleep in preservation of mental efficiency, emotional balance, and overall well-being. Integrative approaches including Dinacharya, stress management, meditation, proper sleep hygiene, and balanced lifestyle practices may therefore play an important role in prevention of sleep disturbances and maintenance of cognitive health.

CONCLUSION

The reviewed literature demonstrates that Ayurveda provides a comprehensive understanding of Nidra not merely as a state of rest, but as an essential regulator of physical, psychological,

metabolic, and cognitive functions. Classical descriptions of Nidra, Nidranasha, Dosha imbalance, Agni disturbance, and Dhatu Poshana show remarkable conceptual similarities with modern physiological mechanisms involving circadian rhythm, neuroendocrine regulation, neuronal restoration, and cognitive processing.

Disturbed sleep was found to adversely affect higher mental functions including memory, attention, learning, emotional regulation, and behavioral responses. Ayurvedic concepts such as Vata aggravation, Manovaha Srotodushti, and imbalance of Raja and Tama may provide a holistic explanation for cognitive and psychological disturbances associated with sleep deprivation. Similarly, modern scientific literature supports the role of inadequate sleep in impaired neurocognitive performance, stress response, and metabolic dysfunction.

The integrative correlation between Ayurvedic principles and contemporary sleep physiology highlights the importance of healthy sleep in preservation of cognitive health and overall well-being. Emphasis on proper lifestyle practices, Dinacharya, mental relaxation, and regulation of sleep habits may therefore serve as important preventive and promotive approaches in maintaining cognitive and psychological balance. Further interdisciplinary research exploring Ayurvedic concepts of Nidra may contribute to development of holistic strategies for management of sleep-related cognitive disorders.

REFERENCES

1. Agnivesha. Charaka Samhita. Revised by Charaka and Dridhabala. Edited by Yadavji Trikamji Acharya. Varanasi: Chaukhambha Surbharati Prakashan; Reprint, 2021.
2. Sushruta. Sushruta Samhita. Edited by Yadavji Trikamji Acharya. Varanasi: Chaukhambha Surbharati Prakashan; Reprint, 2021.
3. Vagbhata. Ashtanga Hridaya. Edited by Harishastri Paradkar. Varanasi: Chaukhambha Surbharati Prakashan; Reprint, 2021.
4. Buysse DJ. Sleep health: can we define it? Does it matter? *Sleep*, 2014; 37(1): 9-17.
5. Walker MP. *Why We Sleep: Unlocking the Power of Sleep and Dreams*. New York: Scribner, 2017.
6. Carskadon MA, Dement WC. Normal human sleep: An overview. In: Kryger MH, Roth T, Dement WC, editors. *Principles and Practice of Sleep Medicine*. 6th ed. Philadelphia: Elsevier, 2017; p. 15-24.
7. Lim J, Dinges DF. A meta-analysis of the impact of short-term sleep deprivation on cognitive variables. *Psychological Bulletin*, 2010; 136(3): 375-389.

8. Rasch B, Born J. About sleep's role in memory. *Physiological Reviews*, 2013; 93(2): 681-766.
9. Krause AJ, Simon EB, Mander BA, Greer SM, Saletin JM, Goldstein-Piekarski AN, et al. The sleep-deprived human brain. *Nature Reviews Neuroscience*, 2017; 18(7): 404-418.
10. Medic G, Wille M, Hemels MEH. Short- and long-term health consequences of sleep disruption. *Nature and Science of Sleep*, 2017; 9: 151-161.