



INTERNATIONAL RESEARCH JOURNAL OF HUMANITIES AND INTERDISCIPLINARY STUDIES

(Peer-reviewed, Refereed, Indexed & Open Access Journal)

DOI : 03.2021-11278686

ISSN : 2582-8568

IMPACT FACTOR : 8.428 (SJIF 2026)

A Comparative Review of Manovaha Srotas and its Correlation with the Neuroanatomy of the Limbic System.

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DOI No. 03.2021-11278686 DOI Link :: <https://doi-ds.org/doi/10.2026-49857612/IRJHIS2608024>

ABSTRACT:

The traditional Indian medical system, Ayurveda, emphasises that health is maintained by the harmonious balance of the body, senses, and mind (Manas) and soul. The subtle channels responsible for facilitating the functions of the mind are collectively known as Manovaha Srotas. In parallel, contemporary neuroscience identifies the Limbic System as the pivotal subcortical network that regulates emotions, memory, and motivation. This comprehensive review aims to establish a functional and anatomical concordance between the Manovaha Srotas and the Limbic System. By critically analysing the classical descriptions of the roots (Moola) and the pathological manifestations (Dushti) of Manovaha Srotas, a direct parallel is drawn to the core structures (Amygdala, Hippocampus, Hypothalamus) and dysfunctions of the Limbic System. The results suggest that the Shira (Head/Brain) component of the Manovaha Srotas' roots conceptually encompasses the neurocircuitry of the Limbic System. At the same time, the Hridaya (Seat of Consciousness) represents its core regulatory output. This correlation offers a robust framework for scientifically validating Ayurvedic interventions, such as Shirodhara and Nasya, in the holistic Management of a wide range of emotional and cognitive disorders (Manovikara).

Keywords: Manovaha Srotas, Limbic System, Manovikara, Ayurveda, Neurophysiology, Hridaya, Shira.

INTRODUCTION:

The philosophy of Ayurveda maintains a definition of health that extends beyond the physical body, integrating the equilibrium of the mind (Manas), senses (Indriyas), and soul (Atma)¹. The transmission and coordination of psychic functions are believed to occur through specialized micro-

channels known as Srotas, specifically the Manovaha Srotas. The vitiation (Dushti) of these channels, often triggered by psychological trauma (Mano Abhighataka) or an impairment of mental fortitude (Satva), precipitates the spectrum of mental ailments known as Manovikara. These mental disorders are characterised by a failure in the mind's ability to govern the senses and cognitive faculties.

Conversely, the biomedical model identifies the Limbic System—a complex aggregation of subcortical and cortical structures—as the central processor of all affective and motivational states. This intricate network, which includes the Amygdala, Hippocampus, and Hypothalamus, is essential for regulating mood, stress response, and memory consolidation². Dysfunction within this system is universally recognised as the neurobiological substrate for a wide range of modern psychiatric conditions, including chronic anxiety, mood disorders, and cognitive deficits.

This review undertakes a critical investigation to compare the anatomical foundation (Moola), physiological processes, and pathological consequences of the Ayurvedic Manovaha Srotas with the structures and pathophysiology of the modern Limbic System. The goal is to establish a unified conceptual framework that strengthens the scientific basis for Ayurvedic mental health interventions.

METHODS:

To gain insights into Manovaha Srotas and the Limbic system, classical Ayurvedic literature like Charaka Samhita, Susruta Samhita, etc, modern texts, databases, Google Scholar, PubMed, AYUSH Research Portal, studies available on Research Gate and journals were used.

1. The Functional framework of Manovaha Srotas:

The Manovaha Srotas are recognised as the functional pathways through which the mind and body interact with each other, and it is required for the operation of the Manas. It is responsible for the flow of thoughts, emotions and psychological functions. Charakacharya in Vimanasthana mentioned that Manovaha Srotas are present all over the body like Tridoshas but are limited to body parts having Chetana (consciousness).³

Classical literatures locate the root of Manovaha Srotas as primarily in the Hridaya and the Shira (head or brain). While Hridaya literally means heart, in this context, it is often interpreted as the Buddhi-Hridaya (the intellectual heart or seat of consciousness within the brain), with Shira representing the entire cranial contents. This dual location suggests a central regulatory node and a physical delivery system (the brain/CNS).

Physiological Role:

The mind (Manas) is described as an Ubhayendriya (dual-acting organ), which coordinates the inflow of sensory data (Gyanendriyas) and regulates the outflow of motor commands (Karmendriyas). The Manovaha Srotas is responsible for processing and transformation of emotions and thoughts, which are under the influence of Rajas and Tamas, into unbiased reasoning before reaching a conclusion by our intellect (Buddhi).

Synonyms of Manovaha Srotas:

Manovaha Srotas is referred differently in various Ayurvedic classical texts such as

- Manovaha Dhamani [Chakrapani on Cha. Sa. Indriya Sthana 12/42]
- Chetanavaha Srotas [Shivadas Sen on Cha.Sa. Chikitsa Sthana 9/5]
- Chetovaha marga [Bhel Samhita Nidana Sthana 7/2]
- ManoBuddhivaha Sira [Cha.Sa.Chikitsa Sthana 10/58]
- Sanjnavaha Srotas [Su.Sa.Uttar Tantra 61/8]
- Sanjnavaha Nadi [Su.Sa. Uttar Tantra 46/7]

Terms like Sira, Nadi and Dhamani refer to different channels and pathways concerned with the maintenance of physiological flow of information.

Interdependence of Rasavaha and Manovaha Srotas:

The relationship between Rasavaha and Manovaha Srotas is rooted in the heart (Hridaya), which serves as the shared anatomical and functional headquarters for both nutritional, circulatory, and psychological processing. While the brain acts as the "workplace" for cognitive and motor functions, it remains entirely dependent on the heart's circulatory network—the ten major Dhamanis—for the continuous supply of Rasa Dhatu (nutrient fluid) and oxygen. This biological interdependence suggests that the channels of nutrition are essentially the same pathways that facilitate mental activity. Consequently, the mind acts as a bridge between the emotional centre of the heart and the executive centre of the brain, creating a unified system where physical vitality and mental impulses are inextricably linked.

Pathologically, this connection is evidenced by the fact that Atichintan (excessive worry or overthinking) is a direct cause of vitiation in the Rasavaha Srotas. This ancient Ayurvedic principle aligns with the modern concept of the "cardiac psyche," which explores how emotional states like anxiety manifest as physical sensations of constriction or dread within cardiac tissue. Because the heart is a highly vascular organ richly supplied with nerve endings, psychological distress can irritate these fibres, leading to tactile physical symptoms. Thus, the health of the circulatory system is not merely a matter of physical diet, but is deeply influenced by the emotional equilibrium of the Manovaha Srotas, illustrating a profound feedback loop between the psyche and the cardiovascular system.

Pathological Manifestation (Dushti):

Manovaha Srotas serves as the primary site for psychological pathology. Acharya Charaka defines Unmada as the Vibhrama (derangement) of eight factors such as Mana (mind), Buddhi (intellect), Sanjna-jnana (self-awareness), Smriti (memory), Bhakti (devotion), Sheela (habits), Cheshta (psychomotor activities) and Achara (code of conduct).⁴

These factors, when deranged, cause vitiation of Manas dosha (Rajas and Tamas), deterioration of Satva guna of Manas and gradual derangement of Tridosha. Foods, activities and

excessive expression of emotions like anger, grief, lust, fear, etc and mental traumas are the fundamental etiological factors for the same. Vitiated Tridosha further vitiates Rasavaha Srotas, which apparently have the same site of origin as of Manovaha Srotas, i.e., Hridaya and Dasha Dhamani (ten great vessels). Hridaya is the seat of Manas. So, all the factors causing vitiation of Rasavaha Srotas and Mano doshas such as Rajas and Tamas will affect Manovaha Srotas.

Pathological manifestation of Manovaha Srotas can be seen in many conditions such as Unmada, Apasmara, Moorchha, Dushta Swapna (bad dreams).

2. The Core Structures of the Limbic System:

The Limbic System is a ring of deep-seated brain structures crucial for behavioural and emotional responses needed for survival and emotional life. They can be viewed as feeding, fighting, fleeing, feeling and mating responses.

Components:

The primary structures involved in emotional and behavioural regulation are the

- Amygdala (processing of fear and aggression).
- Hippocampus (essential for memory consolidation and spatial navigation).
- Hypothalamus (regulating autonomic functions and the HPA stress axis).
- Cingulate Gyrus (involved in emotional learning).
- Parahippocampal gyrus
- Paraolfactory area
- Mamillary bodies
- Septal nucleus
- Anterior nucleus of Thalamus
- Uncus

Connections of Limbic system:

1. Papez Circuit:

This is a closed nervous circuit formed by interconnections between various structures of the limbic system, which form a complex closed circuit.

This loop is central to the processing of memory (especially declarative and spatial memory) and is now viewed as one of several important limbic pathways.

2. Amygdala's Connections:

The amygdala is critical for processing emotions, particularly fear and emotional memory. It has extensive reciprocal connections with the hypothalamus (for autonomic and endocrine responses like "fight-or-flight"), the prefrontal cortex (for emotional regulation and decision-making), and the hippocampus (to attach emotional content to memories). The disorders associated with this are Amnesia and early stage of Alzheimer's disease.

3. Hippocampal Connections:

The hippocampus is highly involved in forming new long-term memories.

The entorhinal cortex acts as the main gateway, serving as the interface between the neocortex and the hippocampus.

The fornix is the main output tract, projecting from the hippocampus to the mammillary bodies and septal nuclei. Disorders such as advanced stages of Alzheimer's disease and psychopathy.

4. Dorsomedial connections:

This is mainly involved with pain perception, self-knowledge, attention, empathy, mentalizing, response selection and action monitoring. The disorders associated with this are depression, autism, schizophrenia, obsessive-compulsive disorders, attention deficit hyperactivity.

Physiological Role:

The system serves as the integration centre that assigns emotional value to sensory input, drives motivation, and orchestrates the body's reaction to stress.

Pathological Correlation:

Dysfunction within these structures is the neurobiological basis for many mental disorders. Hyperactivity of the Amygdala is widely observed in anxiety disorders, while changes in the volume and function of the Hippocampus and the stress-mediated Hypothalamus are central to the pathophysiology of major depressive and mood disorders. Recent research found that dysfunction of Manovaha Srotas corresponded to amygdala hyperactivity and impaired prefrontal-amygdala connectivity⁵. Research using PET and fMRI scans shows that the limbic system is highly active during dreaming. It is thought to synthesise raw emotional drives with cognitive perceptions, effectively anchoring memories to emotions to generate the content we experience during REM sleep. In Charaka Samhita Indriyasthan, while mentioning bad dreams it explicitly mentioned that even in strong persons, when vitiated Tridoshas occupy the Manovaha Srotas, the person gets bad dreams till the doshas come down to normalcy.⁶

DISCUSSION:

The functional domains of the Manovaha Srotas and the Limbic System exhibit a powerful conceptual and physiological similarity.

The Shira (Head/Brain) component of the Manovaha Srotas Moola serves as the macroscopic representation of the neurological apparatus that houses the intricate Limbic System. The Hridaya component, when viewed as the Buddhi-Hridaya or the core regulating centre of consciousness, can be functionally linked to the integrated network output of the Limbic System and its dynamic interaction with the Prefrontal Cortex, which ultimately defines the emotional and motivational state of the individual.

The vitiation of Manovaha Srotas is fundamentally linked to the derangement of Vata Dosha

and the affliction of the mind by Rajas and Tamas qualities. The vitiated Vata (representing movement and excitability) is the primary Dosha involved in Manovikara. This aligns with the modern concept of neural hyperactivity: excessive and uncontrolled neural firing, such as hyperactive Amygdala responses characteristic of severe anxiety, can be conceptualised as an increase in pathological Vata. Furthermore, Prajnaparadha (the intellectual error or misuse of the intellect) and chronic negative sensory-mental interactions cause mental stress that directly parallels the effects of chronic allostatic load and the subsequent dysregulation of the HPA axis, which is central to Limbic System dysfunction.

Therapeutic Implications:

The correlation between Manovaha Srotas and the Limbic System provides clarity for the effectiveness of several Ayurvedic therapeutic modalities:

- **Targeting the Shira:** Therapies directed at the head, such as Shirodhara (oil therapy over the forehead) and Nasya (nasal administration), are primary treatments for Manovaha Srotas Dushti. Shirodhara may function by stimulating cranial nerves and promoting parasympathetic dominance, thus reducing the excessive excitability of the Limbic System (calming the Amygdala). Nasya, by delivering therapeutics through a route anatomically proximate to the brain, can influence olfactory pathways and potentially deliver agents that modulate limbic structures.
- **Medhya Rasayanas:** Ayurvedic herbs classified as Medhya (intellect-enhancing) are prescribed to strengthen the Manovaha Srotas. These substances may function as neurotrophics, promoting neuroplasticity—particularly in the Hippocampus—and normalising neurotransmitter levels that regulate mood and motivation, thus restoring balance to the Limbic System.

CONCLUSION:

The evidence strongly suggests that the Manovaha Srotas are the conceptual precursor and functional equivalent of the Limbic System in Ayurvedic thought. The channels' dual roots in the Shira and Hridaya define a central neuro-emotional axis that is fundamentally responsible for human emotion, cognition, and behavioural output. This unified understanding allows for the scientific validation of traditional Ayurvedic interventions, offering a valuable, holistic paradigm for future research and clinical practice in managing a wide spectrum of psychological and cognitive disorders.

References:

1. Sushruta, Sushruta Samhita, edited by Vidya Yadavji Trikarmaji Acharya, Chaukambha Surbharti Prakashan, Varanasi, 2008, Sutra Sthan 15, verse 41.
2. Rajmohan V, Mohandas E. The limbic system. Indian J Psychiatry. 2007 Apr;49(2):132-9. doi: 10.4103/0019-5545.33264. PMID: 20711399; PMCID: PMC2917081.
3. Pandit Kashinatha Sastri, Charaka Samhita with Ayurveda Deepika Commentary of

Chakrapani, Reprint edition, Varanasi; Chowkhambha Sanskrit Series, 2007 p:511

4. Pandit Kashinatha Sastri, Charaka Samhita with Ayurveda Deepika Commentary of Chakrapani, Reprint edition, Varanasi; Chowkhambha Sanskrit Series, 2007, p: 529

5. Sumedh Joshi, Shivani Ghildiyal, Tanuja Manoj Nesari, Ayurveda constructs as functional biomarkers: A narrative review of translational perspective on Generalised anxiety disorder <https://doi.org/10.1016/j.abst.2025.10.002>

6. Pandit Kashinatha Sastri, Charaka Samhita with Ayurveda Deepika Commentary of Chakrapani, Reprint edition, Varanasi; Chowkhambha Sanskrit Series, 2007, p: 880

7. Bhojani M. K., Varma Swati, Deole Y.S., Manovaha Srotas, In Charak Samhita New Edition, ed. by Basisht G., 1st edition (Ind: Jamnagar, 2020), pp.286. CSRTSDC ebook Doi:10.47468/CSNE. 2023.e01.s09.157

8. Sembulingam. K, Essentials of Medical Physiology, Ninth edition, 2023

