



Review Article

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## ROLE OF SHIRODHARA IN AVSADA: THROUGH LENS OF AYURVEDA

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### Abstract

Today, stress and exhaustion have become ubiquitous in daily life. Virtually everyone must contend with varying levels of stress, as they grapple with the challenges of a frenetic lifestyle that includes demanding work schedules, constant travel, strained relationships, intense competition, the battle against aging and illness, and the pursuit of eternal youth and glamour. According to Ayurveda, there are two conditions that can be linked to depression, known as Vishada and Avsada, and sometimes it is also associated with Kaphaj Unmada. In contrast to modern medicine's use of antidepressants, which can have serious long-term side effects, Ayurveda adopts a holistic approach incorporating proper diet, lifestyle, yoga, Rasayana therapy, and traditional medications. Panchakarma therapies, particularly Shirodhara, play a significant role in improving the condition of individuals with depression. Shirodhara, a popular Panchakarma therapy, is explored in this review article for its application in addressing mental health issues, such as depression. Although the clinical effectiveness of Shirodhara is well-established, its mechanism of action is intricate. Recognizing the interconnectedness of the body, mind, and spirit, Shirodhara aids in soothing a stressed mind and relaxing the entire body. Imbalances in Prana, Udana, Vyana Vayu, Sadhaka Pitta, and Tarpaka Kapha can lead to stress, and Shirodhara helps reestablish harmony among these doshic subtypes, thereby assisting in the management of stress and depression.

**Key-words:** Avsada, Stress, Shirodhara, Panchkarma, Therapy, Ayurveda

## Introduction

Ayurveda suggests that the mind is influenced by three sub-doshas. Prana vata, a sub-dosha of vata, governs functions like the brain, sensory perception, and the mind. Tarpaka kapha, a sub-dosha of kapha, is responsible for regulating the cerebro-spinal fluid. Additionally, Sadhaka pitta, a sub-dosha of pitta, plays a role in managing emotions and their impact on the heart. The mind operates in three different states: satva, rajas, and tamas. When rajas and/or tamas dominate the mind, it can lead to an imbalance in the sub-doshas. Sadhaka pitta can induce a burning effect, while Prana vata causes a drying effect. Tarpaka kapha, in response, increases cerebro-spinal fluid production to counteract these effects and protect the brain.<sup>1-2</sup>

Emotions, referred to as "Manasika bhava," represent the fundamental feelings of human existence. However, when an individual's emotions, thoughts, or behavior consistently trouble them and disrupt their own lives and the lives of those around them, it may indicate the presence of a mental illness. Even though it is estimated that as many as 1 in 5 people experience some form of mental illness, there remains a prevalent stigma and discrimination associated with it. Depression, in particular, tends to be underrecognized and not openly acknowledged. Moreover, the economic costs associated with these conditions are substantial and continue to rise.<sup>3-4</sup>

In the field of Ayurveda, a paramount focus is placed on the mind and its disorders when it comes to overall health. Ayurvedic texts extensively examine both physical ailments and their psychological repercussions concurrently. This holistic approach underscores the clinical significance of the subject and the necessity for specialization. In modern times, it is imperative to scientifically research and validate the effectiveness of treatment in all specialized areas. This principle extends to all alternative systems of medicine. Remarkably, the psychiatric disorders described in Ayurveda thousands of years ago remain relevant today. Depression, in particular, has been extensively studied and is closely associated with concepts such as "vishada," "avasada," "manodhukhaja," "adhija unmada," and "kaphaja unmada." Thus, it is evident that depression is a condition that has persisted throughout history.<sup>5-6</sup>

As per the World Health Organization (WHO), depression can stem from various factors encompassing social, psychological, environmental, and biological influences. Research indicates that life events such as childhood adversity, the loss of something significant, unemployment, poverty, the death of a loved one, physical illness, and abuse, among others, can trigger depressive symptoms. Additionally, some individuals may have a hereditary predisposition to depression. Depression and its associated symptoms are prevalent psychological issues worldwide, affecting more than 300 million individuals of all age groups, which amounts to 4.4% of the global population. Notably, there was an 18.4% increase in the number of people suffering from depression between 2005 and 2015. The WHO forecasts that by 2030, depression will become the primary cause of disability and a substantial contributor to the overall global disease burden. According to a report, in the year 2022, the prevalence rate of depression in India was 4.50%, with the number of cases reaching approximately 50 millions.<sup>7-9</sup>

### **Stress and Mental Illness**

Primary psychological conditions caused purely by mental disorders are kama (lust), krodha (anger), lobh (greed), moha (delusion), irshya (jealousy), mana (pride), mada (euphoria), shoka (sorrow, grief), chinta (anxiety), udvega (neurosis), bhaya (fear), harsha (happiness). The psychiatric conditions caused by a combination of physical and mental (psycho-physical) disorders are unmada (psychosis), apasmara (convulsive disorder), apatantraka (hysteria), atattvabhinvesha (obsession), bhrama (illusion, vertigo), tandra (drowsiness), klama (neurasthenia), mada-murchhasanyasa (loss of sensory perception leading to coma), madatyaya (alcoholism), gadodvega (hypochondriasis).[6] Ayurvedic Psychology Charaka in his treatise Charaka Samhita, describes eight essential psychological factors that are negatively affected in various ways in all psychiatric disorders. The psychopathological condition is a function of these factors, which are manas (mind), buddhi, smriti (memory), sajna jnana (orientation and responsiveness), bhakti (devotion), shila (habits), cheshta (psychomotor activity) and achara (conduct). Compared to other major ayurvedic texts like Sushruta Samhita, and Ashtanga Hridayam, Charaka Samhita gives more emphasis to the view of life as a self-aware field of pure consciousness and natural intelligence where the

knower and the known are one. Ayurveda is very effective for stress management and to encourage body and soul to achieve composure of the mind.<sup>10-11</sup>

### **Causes**

Depression has multifactorial etiology arising from environmental, psychological, genetic and biological factors. Researches over the past decade has clarified that depression is linked with neurotransmitter imbalances, deregulated inflammatory pathways, Hypothalamic Pituitary Adrenal axis disturbances, increased oxidative and nitrosative damage neuroprogression and mitochondrial disturbance. One significant source of stress in modern life is the cumulative effect of various toxic waste products in the environment. Our personality, behavior, and lifestyle all have important influences on our stress level. It may be generated through work, at home, within relationships, as a result of internal emotional conflict, through environment, diet, ill-health, and financial insecurity as well as through major life events such as marriage death, divorce etc. Man facing number problems in the modern society, these problems thrown the man in to mental stress. Mental stress causes the number of psychosomatic disorder like hypertension, migraine and severe headache etc.

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### **Effects**

Depression is a major global health concern, causing a significant burden of illness and death. In today's fast-paced world, various psychological factors contribute to stress and depression, such as the pressure to keep up with others, meet targets, fear of failure, unfulfilled desires related to fitness and body image, and the presence of chronic illnesses like skin conditions and physical disabilities like paralysis. Regardless of whether the stressors are major or minor, our initial response remains consistent. However, when subjected to prolonged or intense stress, our bodies start producing extra stress hormones, which trigger additional processes to maintain our energy levels. If this state of arousal continues, the adrenal glands produce anti-inflammatory substances that both accelerate tissue repair and weaken the body's immune defence system. If these changes persist, the body attempts to adapt to increasing strain and pressure until it reaches a breaking point. This can result in exhaustion, a variety of health problems, and even death when excessive stress remains uninterrupted.<sup>15-16</sup>

## **Shirodhara Procedure**

The Shirodhara procedure consists of three stages: Poorva Karma, Pradhana Karma, and Pashchat Karma. In the Poorva Karma stage, it involves two essential aspects: Sambhara sangraha and Atura siddhata. Sambhara sangraha refers to gathering the necessary materials for the procedure, which include items like droni, shirodharapatra, shirodhara dravya, gauze, cotton earplugs, hot water bath, vessels, rasnadichurna, towels, and attendants. Atura siddhata focuses on preparing the patient, which includes advising them to pass stool and urine, recording pulse, temperature, and blood pressure, and performing Shiro abyanga or Sarvanga abhyanga. Covering the patient's eyes and ears with earplugs is also part of this stage.<sup>17-18</sup>

Moving on to the Pradhana Karma stage, the patient should be comfortably positioned in a supine posture. The height of the dhara patra should be maintained at 4 angula above the forehead. The temperature of the dravya (liquid used in the procedure) should be kept between 38-40 degrees Celsius, with specific parameters for oscillation, duration (45-60 minutes), and a treatment course lasting 7-21 days. In the Pashchat Karma stage, the patient's head is wiped with a towel, and rasna churna is applied to the head's vertex. The patient is then advised to rest for a certain period.

It's worth noting that Shirodhara has a profound impact on the Prana (vital life force) as it resides in the head, which is also the seat of the Indriyas (sense organs). Therefore, Shirodhara strengthens Prana and the Indriyas, which are often affected in cases of psychological disorders. The health of the Indriyas has a direct influence on the mind, ensuring its well-being. According to Yoga Sutra, the Agya Chakra, situated between the eyebrows, controls the function of other Chakras. Meditating on Dhara during Shirodhara enhances the power of the Agya Chakra, regulating the function of other Chakras. Furthermore, Shirodhara helps restore Chetana (consciousness) in the Hridaya (brain), which is often disturbed by Raja and Tama Guna, thus strengthening and revitalizing the Hridaya.<sup>19-23</sup>

## **Probable mode of action of shirodhara**

Shirodhara is a unique therapeutic procedure where a continuous stream of medicated oils, milk, herbal concoctions, or buttermilk is gently poured onto the forehead for a specific

duration. This treatment is particularly effective for addressing mental health issues. When executed with precision, it can produce remarkable healing outcomes. Shirodhara has the ability to stimulate the third eye and crown chakras, awakening intuition and inner wisdom. It also alleviates stress, anxiety, depression, and insomnia by naturally promoting the release of serotonin, dopamine, and melatonin. Additionally, it enhances mental focus and concentration, induces deep relaxation of both the mind and body, and improves sleep patterns.

The continuous application of oil to the forehead for a predetermined time period induces a calming effect and encourages restful sleep. In modern scientific terms, the application of oil can permeate the outer skin layer and enter the bloodstream, reaching the target organs to produce the desired effects. The consistent pouring of oil while in a relaxed and comfortable position provides an additional soothing effect, akin to a mother cradling her child. This induces a sedative and calming effect on the brain, facilitating sleep. The medicated oil applied to the forehead can be absorbed, leading to a tranquilizing effect by reaching the brain cortex. The chemical components in the medicated oil may function as neurotransmitters, potentially compensating for any deficiencies in certain neurotransmitters in the brain cortex, as described by Johnson in the treatment of angina with nitroglycerin.

### **Effects on Body**

Sthapani Marma is located just below the area within the skull where the superior sagittal and cavernous venous sinuses, which serve as a venous reservoir for the brain, can be found. Shankha Marma corresponds to the temporal bone of the skull, beneath which lies the temporal lobe of the cortex and various arterial branches. The base of this area also contains important brain structures. Utkshepa Marma is situated in the region of the intracranial cavity and the venous sinuses, which are surrounded by the coverings of the brain. Adhipati Marma is located at the well-known anterior fontanelle on the vertical groove of the frontal bone. Beneath this point, you can find the sagittal sinus of the brain and the sulcus between the two brain hemispheres. Shirodhara treatment stimulates these marma points and enhances circulation. The warm oil used in shirodhara causes vasodilation in all channels, improving their circulation and, in turn, enhancing blood flow to the brain. This has a

positive impact on higher intellectual functions, leading to an improvement in mental and psychic symptoms. Furthermore, the improved circulation to the hypothalamus also enhances the function of the Autonomic Nervous System, which can help mitigate physiological disturbances caused by stress.

Shirodhara treatment enhances the Agnya Chakra's activity, which plays a crucial role in alleviating stress, as it is associated with the subtle aspects of the mind. This therapy influences structures such as the Pituitary gland, pineal body, and subcortical structures within the midbrain, which are responsible for mental functions like anger, grief, fear, memory, and higher cognitive functions. Shirodhara operates at this level to rectify their functioning. Furthermore, Shirodhara can impact the Autonomic Nervous System by potentially exhibiting Alpha Adrenergic blocking effects, which may hinder certain actions of adrenaline and noradrenaline. It might also affect adrenergic neurons, potentially altering the synthesis, storage, and uptake mechanisms of noradrenalin.<sup>21-24</sup>

In terms of the Endocrine system, Shirodhara's influence on hormone secretion can be attributed to its impact on the hypothalamus, which serves as the primary controller of endocrine secretions. The hypothalamic neurons responsible for releasing regulatory hormones are influenced by specialized Monoaminergic neurotransmitter neurons originating in the midbrain, releasing dopamine, noradrenaline, and serotonin. These midbrain nuclei are, in turn, sensitive to stress and emotional disturbances.<sup>25-26</sup>

Moreover, Shirodhara's effects extend to the regulation of emotional and behavioral patterns. Together with the limbic system, the hypothalamus governs emotions such as anger, aggression, pain, pleasure, and sexual arousal-related behaviors. Ultimately, it can be hypothesized that Shirodhara therapy may have a beneficial impact on the hypothalamus, potentially leading to the reduction of various psychological and physical disorders.

## **Discussion**

Shirodhara is a therapeutic method that involves heating and pouring medicated oils, Kwath, milk, or buttermilk over the forehead of a patient lying in a supine position. This liquid is then allowed to flow over the scalp in a rhythmic manner from a specific height at regular intervals. Shirodhara is a highly effective treatment, and this section discusses the findings

of various research studies related to its role in managing mental disorders such as stress and depression. Shirodhara demonstrates a sympatholytic effect, leading to a reduction in noradrenaline levels, which promotes improved circulation in the peripheral foot skin and enhances the immune response. In a research, it was found that Shirodhara's physiological actions, involving the application of sesame oil to the forehead, trigger a somato-autonomic reflex through thermosensors or pressure sensors in the skin or hair follicles via the trigeminal cranial nerve. This process induces a state of relaxation that helps maintain a psycho-physiological balance. Shirodhara has shown a significant reduction in serum biomarkers of stress, indicating a positive response to stress-related challenges. Since prolonged stress can lead to depression, this study is relevant. Dhara therapy, particularly Takradhara, plays a significant role in alleviating stress-induced disorders. Shirodhara, when combined with Ayurvedic treatments, exhibits neuroendocrine modulatory and antidepressant effects in Vishada patients. Cortisol levels significantly decrease after this therapy. Takradhara demonstrates better improvements in depression and anxiety scores among the subjects. One potential mechanism of action may involve pH-sensitive receptors on the forehead activated by Takra.<sup>27-30</sup>

## **Conclusion**

Stress-related disorders have become increasingly prominent in the current landscape. People are experiencing various stressors and making significant efforts to alleviate them. The Shirodhara procedure itself appears to induce a relaxation response, regardless of the specific medication employed. The prevalence of mental disorders such as depression is increasing within our society, impacting individuals of all age ranges. Therefore, it is crucial to address this pressing issue by providing an efficient solution for the betterment of humanity. During Shirodhara, patients experience both physical and mental relaxation, which not only fortifies their mind and spirit but also persists beyond the treatment. The stimulation of Marmas, due to their connection with higher centers, may have positive effects on the body. Since Shirodhara is applied directly to the head, it can be regarded as a beneficial therapy for alleviating conditions resulting from stress, strain, and other psychological factors. Based on the preceding conversation, it is evident that Shirodhara offers significant relief from the symptoms of depression, making it a valuable asset for mankind.



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