

Exploring The Role of Shirodhara In Alleviating Post-Covid Psychological Symptoms

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ABSTRACT

The COVID-19 pandemic has profoundly impacted global mental health, leading to an increased prevalence of psychological symptoms such as - anxiety, depression, and insomnia. This review explores the potential role of Shirodhara, an ancient Ayurvedic therapy, in alleviating post-COVID psychological symptoms. A comprehensive literature search was conducted across PubMed, Scopus, and Google Scholar, up to May 2024, using terms such as “Shirodhara,” “post-COVID,” “insomnia,” “anxiety,” “stress,” “oil dripping therapy,” and “depression.” The findings indicate that Shirodhara may significantly promote mental well-being through its calming effects. Despite the promising results, further research, including Randomized controlled trials (RCTs), is needed to validate these findings and integrate ‘Shirodhara therapy’ into mainstream mental health treatment protocols. Tackling the psychological consequences of COVID-19 necessitates a multifaceted strategy, with Shirodhara potentially being key to improving the well-being of those impacted.

Keywords: Shirodhara, Post-COVID, Anxiety, Depression, Insomnia, Ayurveda.

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INTRODUCTION

The ramifications of the COVID-19 pandemic on mental health are profound and multifaceted, affecting individuals and communities globally. Evidence indicates a significant escalation in mental health conditions across various demographics¹⁻². The long-term consequences remain uncertain, spanning social, economic, and individual dimensions of mental well-being. Studies have introduced the concept of an ‘emotional epidemic curve,’ predicting a surge in mental health challenges as the pandemic wanes³⁻⁴. Viral infections can initiate inflammatory reactions both at the periphery and within the central nervous system, known as neuroinflammation. This condition has the potential to result in enduring issues related to the musculoskeletal system, cognitive functions, and mental health⁵⁻⁸. A study examining the aftermath of Severe Acute Respiratory Syndrome and Middle East Respiratory Syndrome identified a range of persistent clinical issues impacting health. These

include chronic fatigue, diminished physical abilities, muscle weakness, heightened levels of depression and anxiety, Post-traumatic stress disorder (PTSD), and disturbances in sleep patterns. Notably, a decrease in the overall quality of life was noted to persist for up to a year following significant coronavirus epidemics⁹.

The COVID-19 pandemic has not only been a medical crisis but has also significantly impacted society’s political and economic spheres. While initial efforts were directed at controlling the virus, the ensuing mental health challenges have necessitated a shift in focus to prioritize psychological well-being. Research globally has tracked the pandemic’s psychological impact, revealing a surge in distress, depression, anxiety, and stress¹⁰. It is crucial to address the psychological aftereffects of post-COVID-19 that have an impact on the quality of life. A summary of the long-term psychological effects of COVID-19, along with relevant findings and references, is provided in Table 1. A comprehensive overview

Table 1: Long-Term Psychological Effects of COVID-19 with Findings

Aspect	Details
Psychological Health	A significant number of COVID-19 survivors face psychological issues like anxiety, depression, PTSD, and sleep disturbances, regardless of prior mental health conditions ⁹⁻¹¹ .
Sleep Disturbances	Insomnia is a key concern during both acute and chronic stages of COVID-19, potentially due to pro-inflammatory cytokine release affecting sleep-related metabolic and cardiovascular functions ¹²⁻¹⁶ .
Gender Differences	Females report mental health symptoms more frequently, with ICU survivors showing higher rates of depression, PTSD, and cognitive issues ¹⁷⁻²¹ .
Post-ICU Syndrome	PTSD symptoms are part of post-ICU syndrome, with stress-related symptoms linked to a higher risk of neurocognitive impairment and psychiatric morbidity ²²⁻²³ .
Chronic Fatigue Syndrome	Post-COVID-19 symptoms resemble chronic fatigue syndrome, characterized by persistent muscle pain, joint pain, fatigue, cognitive issues, and sleep problems ²⁴⁻²⁵ .

Table 2: COVID-19 Pandemic: Mental Health Risk Factors²⁶

Factor Type	Risk Factors
Demographic	Female: Depression, anxiety, stress; Male: Attention problems, addiction Younger Age: Emotional issues; Older Age: Depression, anxiety
Socioeconomic	Low income, financial stress
Health	Pre-existing mental health conditions
COVID-19 Specific	Infection risk, infected friend or relative, Perceived stress, Isolation and loneliness, Worry, concerns about health, Concerns/fears about the pandemic, Feelings of uncertainty, Material hardship.
Behavioral	Confinement, screen time, disrupted routines

of mental health risk factors identified during the COVID-19 pandemic, is presented in Table 2.

Current Gaps in Conventional Treatment Options: Many patients experience persistent symptoms despite receiving standard care, highlighting the limitations of existing treatment modalities. Side effects from medications can further complicate recovery, leading to a reduced quality of life and adherence issues. Psychological therapies, while beneficial, may not be sufficient on their own for all patients. These gaps underscore the need for integrative approaches that can enhance and complement conventional treatments.

In Ayurveda, 'Murdhataila' encompasses four primary treatments: Shiroabhyanga, Shiroshaka, Shiropichu, and Shirobasti, each progressively offering greater therapeutic benefits²⁷. Among these, Shirodhara stands out as a distinctive Bahya Snehana (external oleation therapy) procedure. It involves the gentle pouring of warmed liquids over the forehead in a specific manner, which can be performed using various substances such as oils, milk, buttermilk, water, or decoction - known respectively as Tailadhara, Ksheeradhara, Takradhara, Jaladhara, and Kwathadhara.

Shirodhara has been utilized to address a range of conditions, including neurological and psychosomatic disorders, which can significantly affect an individual's quality of life, leading to symptoms like anxiety, depression, and a reduced capacity to function²⁸. Therefore, Shirodhara can offer a serene approach to combat the psychological aftermath of COVID-19. Its potential mechanisms include its mechanical effect on the senses and doshas balance²⁹, enhanced drug absorption through the scalp affecting neurotransmitter

levels, energy transformation stimulating nerve impulses, and constant pressure and temperature reducing sympathetic tone and improving brain circulation. It also involves the activation of vital points (marmas) in the cephalic region, stimulation of the Ajnya chakra influencing other chakras and bodily functions, and a postural effect akin to Shavasana in yoga reducing various symptoms such as anxiety and sleep disturbances³⁰⁻³².

This review delves into the efficacy of Shirodhara in soothing post-COVID psychological symptoms, supported by empirical evidence from prior studies that underscore its therapeutic impact on mental health recovery.

MATERIALS AND METHODS

Study Selection

Given the limited availability of research articles specifically addressing the use of Shirodhara for post-COVID psychological illnesses, we included case studies as our primary data sources. Specifically, we identified and analyzed three case studies involving post-COVID patients experiencing anxiety/depression or having a history of COVID-19 with subsequent mental health issues treated with Shirodhara. These case studies were selected due to the lack of more comprehensive research articles in this niche area.

For previous work on Shirodhara in treating anxiety, depression, and insomnia, we focused on research articles that specifically used Shirodhara as an intervention. Review articles, single case studies, and studies focusing on other psychological or physical conditions were excluded to maintain a clear focus on the primary mental health outcomes of interest.

Literature Search Strategy

A comprehensive literature search was conducted across multiple databases, including PubMed, Scopus, and Google Scholar, up to May 2024. The search terms used were: "Shirodhara," "post-COVID," "insomnia," "anxiety," "stress," "oil dripping therapy," and "depression." This search strategy was designed to capture a broad range of studies related to the effects of Shirodhara on the specified psychological conditions.

Data Analysis

The extracted data was tabulated to accommodate the heterogeneous nature of the included studies, allowing for a clear comparison and contrast of the diverse methodologies and outcomes. The findings from the case studies on post-COVID psychological symptoms were compared with those from the broader literature on Shirodhara's effects on anxiety, depression, and insomnia. Key themes and patterns were identified and discussed in the context of the existing evidence.

RESULTS

Impact of Shirodhara on Post-COVID Psychological Cases

The literature search yielded a limited number of studies addressing the use of Shirodhara for post-COVID psychological symptoms. Three relevant case studies were identified and analyzed. These case studies (summarized in Table 3) reported notable improvements following Shirodhara treatment.

Impact of Shirodhara on Anxiety: Research Overview

The impact of Shirodhara on anxiety has been explored through various studies. Rastogi et al. studied 13 patients with

generalized anxiety disorder (GAD) who received Shirodhara with Ksheera Bala oil over six weeks, showing significant improvements in anxiety scores measured by the Hamilton Anxiety Rating Scale (HAM-A)³³. Tubaki et al. assessed the effects of Manasamitra Vataka and Shirodhara with Brahmi tailam in 72 patients with GAD and comorbid social phobia. Their findings suggested that these Ayurvedic treatments improved subjective sleep quality and preserved sleep organization, offering a potential alternative to conventional treatments³⁴. Jain et al. compared Jatamansi Siddha Taila Shirodhara with Tila Taila Shirodhara in 60 patients with anxiety neurosis. Group A, treated with Jatamansi Siddha Taila, showed significant symptom relief and no relapses over six months, while Group B did not show significant improvements³⁵.

Hegde et al. examined an integrated Yoga and Shirodhara intervention in 30 adults with anxiety disorders, finding significant improvements in clinical symptoms, cognition, and sleep quality, with the combined treatment group showing particularly notable improvements³⁶. Kumar et al. evaluated the effects of Shirodhara with water and Ashwagandha extract in 40 patients with primary headache, noting significant anxiety score improvements in both groups, with the mixed therapy group showing a slightly higher improvement rate³⁷. Rao and Joshi investigated Shankhapushpi Panak and Shirodhara with Mansyadi Kwatha in 30 patients with Chittodvega, comparing their outcomes to another 30 patients treated with Sertraline. They found that the Ayurvedic treatment had effects comparable to Sertraline in reducing anxiety symptoms³⁸.

Table 3: Shirodhara Intervention in Post-COVID Psychological Cases⁵⁰⁻⁵²

S No	Authors (Year)	Treatment details	Variables	Results	Interpretation
1.	Anu P V, Syed Munawar Pasha, (2022)	Ama Pachana: Amritottaram Kashaya Shodhana: Virechana Shiro Lepa (Amalaki Churna) & Shirodhara: 7-days with Bringaraja Taila.	Hair fall ; Anorexia ; Constipation ; Loss Of Sleep ; Panic Attacks	Considerable relief after 3 months	Effective Ayurvedic management of post-COVID-19 hair fall along with significant symptom improvement in Loss Of Sleep and Panic Attacks.
2.	Peethambaran ST, Raj LS, Sreedeepti GN (2023)	Oral medications, Shiropichu (Balashwagandhadi Taila for 45 minutes over 7 days), Virechana, Shirodhara (Brihat Chandanadi Taila for 45 minutes over 7 days), and Nasya.	HARS, GAD 7 scale, PSQI, WHO QOL-BREF, CGI	Complete relief from symptoms after 20 days	Ayurvedic treatments provided a cost-effective and side-effect-free alternative for managing GAD-induced insomnia (excessive anxiety and worry as the patient lost his job during the time of COVID-19 pandemic.)
3.	Dr. Manoj Shamkuwar, Prof. Dr. Anandaraman PV, Dr. Dinesh Kataria et al., (2024)	Shirodhara with Balashwagandhadi oil for 45 minutes over a period of 14 days, complemented by conventional allopathic medicines.	HAM-A, HDRS, PHQ-9, QOL, Serum cortisol levels, SII Index	Significant improvement in HAM-A, HDRS, and PHQ-9 scores; Increase in QOL by 34%; Serum cortisol levels increased from 3.09 ug/dL to 11.76 ug/dL	Shirodhara therapy using Balashwagandhadi taila is effective as an add-on treatment for post-COVID-19 anxiety with mild depression

Table 4: Impact of Shirodhara on Depression: Research Overview⁵³⁻⁵⁵

S No	Authors/Year	Intervention	Study Details	Evaluation Method	Results
1.	Fulzele A.V., et al. (2014)	Herbal Preparation & Shirodhara with Ashwagandha Oil	30 MDD patients were divided into two groups: Group A (Herbal preparation only) and Group B (Herbal preparation + Shirodhara with Ashwagandha oil). Treatment was for 42 days. Shirodhara was for 14 consecutive days.	HDRS-item 17, CGI-S at baseline and day 42, CGI-I at day 42.	Highly significant improvement ($p < 0.001$) in clinical symptoms and HDRS 17, CGI-S, and CGI-I scores in both groups at the end of treatment.
2.	Nareshrao D.P., Tatobaji T.M. (2017)	Ashwagandha Siddha Tailadhara	10 patients with Avasada (depression) were selected for Tailadhara treatment.	Improvement in subjective signs and symptoms of Avasada, HDRS (Hamilton Depression Rating Scale) score.	Highly significant improvement ($P < 0.0001$) in Dukhatva, Atmano Ashaktataa, Apraharsha, and HDRS scores for insomnia. Tailadhara was effective and non-habit forming.
3.	Bishnoi S., et al. (2021)	Panchgavya Ghrita & Takradhara	30 patients with depression were treated with Panchgavya Ghrita (20 ml with lukewarm water or milk) for 30 days and Takradhara for 10 days. Follow-up was done every 10 days.	BDI (Beck Depression Inventory) for subjective assessment, routine blood and urine examination for objective parameters.	Complete remission in 13 patients (43.33%), marked improvement in 17 patients (56.67%). No adverse effects were observed.

Ramana et al. divided 100 GAD patients into two groups: Group I (Ashwagandha and Mandookaparni Churna Tablets only) and Group II (Ashwagandha and Mandookaparni Churna Tablets + Shirodhara). The treatment spanned 12 weeks, with Shirodhara administered daily for 30 minutes during the first seven days. The Hamilton Anxiety Rating Scale was evaluated at baseline, and on days 28, 56, and 84. Significant improvement was observed in both groups at the end of 12 weeks, with no adverse events reported, indicating that the treatment was safe and effective³⁹.

Impact of Shirodhara on Insomnia: Research Overview

Various studies have demonstrated the positive impact of Shirodhara on insomnia, showcasing its potential as an effective treatment for this condition. Pokharel and Sharma conducted a study on 30 patients with Anidra, dividing them into three groups: one receiving Insomrid tablets (Group I), another undergoing Shirodhara therapy (Group II), and the third receiving both treatments (Group III). Group III showed the most significant improvements, while Groups I and II also experienced notable benefits without any adverse effects⁴⁰.

Sharma et al. treated 20 insomnia patients with Shirodhara using Ashwagandha Taila, observing significant improvements in managing stress-induced insomnia and related symptoms. The treatment demonstrated long-lasting stress-relieving and tranquilizing effects⁴¹. Similarly, Jambli et al. treated 10 subjects with primary insomnia using Shirodhara with Panchasugandha Sadhita Takra for 14 days. The study reported positive responses in increasing sleep duration and quality, as well as overall well-being, as measured by the Athens Insomnia Scale (AIS)⁴². Singh et al. treated 10 patients with Nidranash using Balashwagandhadi Taila Shirodhara, resulting in highly significant improvements in all parameters assessed by the Athens Insomnia Scale (AIS), indicating effective management of primary insomnia⁴³. Whereas,

Kadam et al. investigated Himsagar Taila Shirodhara on 15 patients, finding significant improvements in various sleep parameters, including sleep onset and maintenance, assessed by the Insomnia Severity Index (ISI)⁴⁴. Saklani and Swapnil studied Chakra Taila Shirodhara in patients with Anidra, noting excellent effects on sleep within 4 weeks and significant improvements in sleep duration and maintenance without adverse effects or relapse⁴⁵.

Rani et al. compared Bala and Shatavari Siddha Ksheera Shirodhara with Tila Taila Shirodhara in 131 patients with Anidra. Both groups showed highly significant improvements, indicating that the 'procedural effect' of Shirodhara might be more crucial than the specific medication used⁴⁶. Pal and Sharma compared Dashmoola Taila Dhara with Jala Dhara in 20 patients with Anidra. Both treatments resulted in highly significant improvements, with Dashmoola Taila showing minimal symptom recurrence and Jala Dhara showing mild recurrence in a few cases⁴⁷. Singh et al. treated 10 patients with stress-induced chronic insomnia using Dashamula Kwatha Shirodhara. The study showed significant improvement in 25% of patients, moderate in 50%, and mild in 25%, with noticeable relief in sleeplessness and distress⁴⁸.

Tokinobu et al. conducted a randomized crossover study comparing Sesame Oil Shirodhara (SOS) with Warm Water Shirodhara (WWS). The study found that SOS improved sleep quality and quality of life compared to WWS, although it did not significantly affect daytime sleepiness or objective sleep measures⁴⁹. Collectively, these studies highlight the effectiveness of Shirodhara in treating insomnia, with various drava dravya providing significant benefits in sleep quality, duration, and overall well-being.

Impact of Shirodhara on Depression: Research Overview

The impact of Shirodhara on depression has been explored through various studies which are tabulated in Table 4.

DISCUSSION

This review highlights the significance of Shirodhara as a solo or complementary therapy for alleviating post-COVID psychological symptoms, including depression, anxiety, and insomnia. Through the analysis of various research articles and three case studies, we observed consistent improvements in these mental health parameters following Shirodhara treatment. The common themes and trends identified in this review align closely with what is already known from existing research on Shirodhara and its effects on mental health. These include:

- **Reduction in Anxiety and Depression:** Studies demonstrating the calming effects of Shirodhara support this, which may be mediated through the modulation of the autonomic nervous system and increased serotonin levels⁵⁶.
- **Improvement in Sleep Quality:** The rhythmic and continuous pouring of oil in Shirodhara likely promotes relaxation and helps regulate sleep patterns, effectively addressing insomnia⁵⁷.
- **Integrative Benefits:** While pharmacological and psychological therapies remain the cornerstone of treatment for post-COVID mental health issues, the integration of Shirodhara could enhance therapeutic outcomes. Patients may not fully respond to psychological interventions alone and in such cases, Shirodhara can serve as an adjunctive therapy, offering a non-invasive approach to symptom management. Shirodhara can potentially reduce the need for higher medication doses and enhance the overall effectiveness of existing treatments.
- **Consistency Across Different Populations:** The positive outcomes of Shirodhara treatment in diverse populations, including post-COVID patients and individuals with general anxiety, depression, and insomnia highlight its broad applicability.

The promising results from Shirodhara suggest that it can be effectively incorporated into treatment plans for post-COVID mental disorders. Healthcare providers could consider this approach to patient care, especially for those who do not fully benefit from conventional treatments. Future research should focus on conducting large-scale RCTs to establish the efficacy and mechanisms of Shirodhara more definitively. As a non-invasive treatment, it can serve as a valuable add-on therapy, working synergistically with conventional treatments to improve overall patient outcomes. Exploring the synergistic effects of combining Shirodhara with other complementary therapies, such as acupuncture, yoga, hypnosis, biofeedback, aromatherapy, relaxation techniques, herbal remedies, vitamins and dietary supplements, light therapy, and mindfulness-based approaches, could also provide valuable insights into comprehensive mental health management.

Limitations

The findings' generalizability is constrained by the small number of case studies and the absence of randomized controlled trials. Potential biases present in case reports and

the subjective evaluation of certain outcomes may vary the results. Furthermore, the variability in methodology and quality across the studies could undermine the strength of the conclusions drawn.

CONCLUSION

Shirodhara presents a valuable therapy for alleviating post-COVID psychological symptoms, with potential benefits in reducing depression, anxiety, and insomnia. While current evidence is promising, further research is essential to validate these findings and integrate Shirodhara into mainstream therapeutic protocols. By embracing integrative approaches, we can enhance the quality of life for patients recovering from the psychological impacts of COVID-19.

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