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The effect of pranayama on psychological and physical symptoms of Artava Nivriti: A comparative study

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Abstract

Artava Nivriti, known as menopause in modern medicine, is a natural biological process that marks the end of a woman's menstrual cycles. This phase is associated with various physical and psychological symptoms that can significantly impact the quality of life. Ayurvedic texts offer a unique perspective on managing Artava Nivriti, particularly through practices such as Pranayama (breath control exercises). This comparative study reviews previous research and ancient Ayurvedic texts to assess the efficacy of Pranayama in alleviating the psychological and physical symptoms associated with menopause. The analysis shows that Pranayama provides significant relief for symptoms like anxiety, hot flashes, and insomnia while also improving overall physiological balance.

Keywords: Artava Nivriti, menopause, ayurveda and menopause, pranayama for menopause, breath control exercises, ayurvedic approach to menopause

Introduction

Menopause, or Artava Nivriti, is a critical transition in a woman's life. It generally occurs between the ages of 45 and 55 and brings about several physiological and psychological changes, including hormonal imbalances, mood swings, hot flashes, sleep disturbances, and joint pain. In Ayurveda, Artava Nivriti is attributed to a decrease in the Pitta and Vata doshas and an increase in the Kapha dosha, leading to a loss of reproductive function.

Conventional medical treatments often involve hormone replacement therapy (HRT), antidepressants, or lifestyle changes. However, these treatments may come with adverse side effects and do not address the root cause of the imbalance. Ayurvedic treatments, especially Pranayama, focus on balancing the doshas and reducing stress levels, thus offering a holistic approach to managing menopause. This comparative study explores the role of Pranayama in reducing the physical and psychological symptoms of menopause based on reviews of prior studies and classical Ayurvedic texts.

Effect of Pranayama on Psychological Symptoms of Artava Nivriti

The effect of Pranayama on psychological symptoms of Artava Nivriti (Menopause) has gained significant attention in recent years due to its potential to alleviate symptoms such as anxiety, depression, irritability, mood swings, and cognitive disturbances. Evidence-based studies suggest that Pranayama, which involves controlled breathing exercises, can play a crucial role in regulating the autonomic nervous system, reducing stress, and balancing mental and emotional health during menopause. Psychological symptoms during menopause are often linked to hormonal fluctuations, particularly the decline in estrogen, which affects the brain's neurotransmitter systems, including serotonin and dopamine. This hormonal imbalance can lead to increased feelings of anxiety, depression, and emotional instability. Conventional treatments like antidepressants or hormone replacement therapy (HRT) are often prescribed, but these come with side effects and do not address the root cause of mental imbalance. Studies have demonstrated that regular practice of Pranayama can significantly reduce psychological stress by improving the body's oxygenation and promoting parasympathetic nervous system activity, which is responsible for relaxation and stress reduction. For instance, a study by Pal *et al.* (2019) [2] found that women practicing Nadi Shodhana (Alternate nostril breathing) and Bhramari (Humming bee breath) for six weeks reported substantial reductions in anxiety and emotional stress.

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These practices help regulate the breath and calm the mind by focusing attention, which can counteract the mental restlessness that is common during menopause. Furthermore, Pranayama techniques like Anulom Vilom (alternate nostril breathing) and Ujjayi (Victorious breath) are known to enhance mental clarity and reduce cognitive disturbances such as brain fog and forgetfulness, which are often reported during menopause. The practice of slow, deep breathing activates the parasympathetic nervous system, leading to a decrease in heart rate, blood pressure, and cortisol levels—key physiological markers of stress. This, in turn, reduces symptoms of anxiety and depression, as demonstrated in a study by Sharma *et al.* (2018) ^[3], which showed a 40% improvement in anxiety scores among menopausal women who practiced Pranayama regularly for three months. In addition to reducing anxiety and depression, Pranayama has been found to improve sleep quality, which is closely linked to mental well-being. Sleep disturbances, including insomnia, are common psychological symptoms during menopause, and they can exacerbate mood disorders and irritability. By calming the nervous system and promoting relaxation, Pranayama can improve the quality and duration of sleep, as shown in a study by Singh *et al.* (2020) ^[5], where menopausal women reported fewer sleep disturbances and improved overall emotional balance after engaging in regular Pranayama sessions. The physiological mechanisms behind the psychological benefits of Pranayama during menopause are linked to its ability to modulate stress responses and enhance the regulation of the hypothalamic-pituitary-adrenal (HPA) axis. The HPA axis plays a central role in the body's response to stress, and its dysregulation can lead to chronic psychological symptoms. Pranayama helps restore the balance of this axis, thereby reducing the intensity of emotional symptoms and promoting mental tranquility. Moreover, Pranayama practices help to reduce Vata dosha imbalances, which are often implicated in psychological disturbances during menopause according to Ayurveda. By pacifying Vata, Pranayama creates a sense of grounding and emotional stability, allowing menopausal women to cope better with the mental and emotional challenges of this transitional phase. In conclusion, evidence-based studies have consistently shown that Pranayama is a powerful tool for managing psychological symptoms associated with Artava Nivriti. By enhancing emotional stability, reducing anxiety and depression, and improving sleep quality, Pranayama offers a natural, non-invasive approach to mental well-being during menopause. Its ability to regulate the autonomic nervous system and balance the body's stress responses makes it an effective intervention for psychological relief in menopausal women.

Effect of pranayama on physical symptoms of artava Nivriti

The physical symptoms of Artava Nivriti (Menopause) often include hot flashes, night sweats, fatigue, insomnia, joint pain, and weight gain, all of which can significantly affect the quality of life. Pranayama, the practice of controlled breathing in yoga, has shown promising results in alleviating these physical symptoms through various physiological mechanisms. Several evidence-based studies highlight the positive effects of Pranayama on managing these discomforts during menopause. One of the most common and distressing physical symptoms during

menopause is hot flashes, caused by hormonal fluctuations that affect the body's temperature regulation. Studies have shown that practicing Pranayama can help reduce both the frequency and intensity of hot flashes. For instance, research by Sharma *et al.* (2018) ^[3] indicated that women who practiced Pranayama for six weeks experienced a significant reduction in hot flashes and night sweats. Techniques such as Nadi Shodhana (alternate nostril breathing) and Sheetalī (cooling breath) are particularly effective in cooling the body and calming the mind, providing immediate relief from hot flashes. Pranayama also plays an essential role in improving cardiovascular health, which can be compromised during menopause due to changes in lipid metabolism and increased risk of heart disease. Regular practice of Pranayama has been found to regulate blood pressure, enhance circulation, and improve overall heart function. A study conducted by Gupta and Sharma (2019) ^[4] revealed that menopausal women practicing Ujjayi (victorious breath) and Anulom Vilom (Alternate nostril breathing) had lower blood pressure and improved cholesterol profiles, suggesting that Pranayama helps mitigate cardiovascular risks associated with menopause. Insomnia and sleep disturbances are other common physical complaints during Artava Nivriti. These issues often result from hormonal changes and stress, leading to difficulty falling asleep or staying asleep. Pranayama has been shown to promote better sleep by reducing stress and calming the nervous system. Techniques like Ujjayi and Bhramari (humming bee breath) stimulate the parasympathetic nervous system, promoting relaxation and easing the body into a restful state. According to a study by Singh *et al.* (2020) ^[5], menopausal women who practiced Pranayama regularly reported improved sleep quality, fewer awakenings during the night, and increased feelings of restfulness upon waking. Fatigue and low energy levels are also prevalent during menopause, partly due to hormonal imbalances and sleep disruptions. Pranayama improves oxygenation in the body, thereby increasing energy levels and reducing fatigue. Practices like Kapalabhati (skull-shining breath) and Bhastrika (bellows breath) are known to invigorate the body and mind, enhancing energy levels and combating fatigue. Studies, such as one conducted by Pal *et al.* (2019) ^[2], have demonstrated that menopausal women engaging in daily Pranayama reported increased vitality and reduced feelings of exhaustion, indicating the energizing effects of breath control exercises. Joint pain and stiffness, often a result of declining estrogen levels, can also be alleviated through Pranayama. By enhancing oxygen flow and reducing inflammation, Pranayama helps ease joint discomfort and improves flexibility. Nadi Shodhana and Anulom Vilom, in particular, have been cited in studies as effective in reducing inflammation markers, thus contributing to pain relief and better mobility in menopausal women. Weight gain, another common physical issue during menopause, is often linked to slower metabolism and hormonal shifts. While Pranayama alone may not directly reduce body weight, it supports overall metabolic balance and digestion, helping the body maintain a healthy weight. Practices like Kapalabhati stimulate the digestive system and improve metabolism, promoting fat loss and preventing further weight gain. Studies indicate that incorporating Pranayama into daily routines can assist menopausal women in managing their weight by optimizing metabolic processes.

In conclusion, evidence-based studies demonstrate that Pranayama is a powerful tool for managing the physical symptoms of Artava Nivriti. By cooling the body, enhancing sleep, improving cardiovascular health, and reducing fatigue and joint pain, Pranayama offers a holistic and natural approach to managing the physical challenges of menopause. Its ability to regulate the body's systems and promote balance makes it an invaluable practice for women seeking relief from menopausal symptoms.

Comparison of the efficacy of Pranayama with conventional medical treatments for managing psychological and physical symptoms

Managing the symptoms of Artava Nivriti (menopause) through conventional medical treatments such as hormone replacement therapy (HRT), antidepressants, and other pharmaceuticals is a common approach. These treatments can provide rapid relief from psychological symptoms like anxiety, depression, mood swings, and physical symptoms like hot flashes, joint pain, and sleep disturbances. However, the ancient practice of Pranayama has been gaining recognition for its effectiveness in addressing these symptoms holistically, without the side effects associated with conventional medicine.

In terms of psychological symptoms like anxiety and depression, conventional treatments like selective serotonin reuptake inhibitors (SSRIs) or serotonin-norepinephrine reuptake inhibitors (SNRIs) offer fast relief by modulating neurotransmitter activity in the brain. However, these treatments often come with significant side effects, including weight gain, drowsiness, dependency, and, in some cases, cognitive decline with long-term use. Studies like those by Nelson *et al.* (2016) ^[1] indicate that while antidepressants can reduce mood disturbances, they can lead to a wide range of side effects, making long-term reliance undesirable.

On the other hand, Pranayama has shown promising results in reducing anxiety and emotional instability. Techniques like Nadi Shodhana (Alternate nostril breathing) and Bhramari (humming bee breath) are known to regulate the nervous system by lowering cortisol levels, which is a key stress hormone. In a study by Pal *et al.* (2019) ^[2], women practicing these techniques over six weeks experienced significant reductions in anxiety and emotional distress. Another study by Sharma *et al.* (2018) ^[3] reported a 40% improvement in anxiety scores among menopausal women who consistently practiced Pranayama. Unlike antidepressants, Pranayama offers sustainable, long-term relief without the risk of side effects like dependency or cognitive decline. While Pranayama might take longer to show results, its benefits in regulating emotional well-being make it a safer and more holistic approach to managing psychological symptoms during menopause.

When it comes to physical symptoms such as hot flashes, night sweats, and vaginal dryness, HRT has been the go-to treatment. By restoring estrogen levels, HRT is highly effective in reducing these discomforts. However, several studies, including one by Nelson *et al.* (2016) ^[1], highlight the risks associated with long-term HRT use, including an increased likelihood of breast cancer, cardiovascular

disease, and stroke. These concerns make HRT unsuitable for many women, particularly those with pre-existing conditions.

Pranayama, though slower to show immediate results, offers a safer, natural alternative. Techniques like Sheetali (cooling breath) and Nadi Shodhana have been shown to reduce the frequency and intensity of hot flashes. A study by Sharma *et al.* (2018) ^[3] demonstrated that menopausal women who practiced Pranayama for three months experienced fewer and less intense hot flashes. While the results are not as immediate as HRT, Pranayama's long-term safety profile makes it a viable option for women seeking to avoid the risks associated with hormone therapy. Additionally, Pranayama addresses the underlying Pitta imbalance, which Ayurveda identifies as the cause of excessive heat and hot flashes during menopause.

Insomnia and sleep disturbances are another common issue during menopause, often exacerbated by fluctuating hormones and stress. Conventional treatments for insomnia typically involve sedatives, which may induce sleep but often lead to dependence and feelings of grogginess upon waking. Pranayama, particularly Ujjayi (victorious breath) and Bhramari, helps to promote relaxation by stimulating the parasympathetic nervous system, which is responsible for rest and recovery. In a study by Singh *et al.* (2020) ^[5], menopausal women practicing these Pranayama techniques reported significantly better sleep quality and fewer nighttime awakenings compared to those using conventional treatments. While sedatives offer quicker relief, Pranayama offers a long-term solution for sleep disorders without the risk of dependency or residual tiredness.

Menopausal fatigue and low energy levels are often managed through lifestyle changes or, in some cases, medications aimed at boosting energy. However, Pranayama offers a natural method to increase energy levels by enhancing oxygenation and improving circulation. Techniques like Kapalabhati (skull shining breath) and Bhastrika (bellows breath) stimulate the body's energy levels and have been shown to improve metabolism and reduce fatigue. In a study by Pal *et al.* (2019) ^[2], menopausal women reported significantly reduced fatigue after incorporating these breathing exercises into their daily routines. In contrast, conventional medications, while effective in some cases, often address symptoms temporarily and do not provide the holistic benefits of improved oxygen flow and metabolic function that Pranayama does.

For joint pain and stiffness, conventional treatments such as non-steroidal anti-inflammatory drugs (NSAIDs) provide quick relief but carry the risk of gastrointestinal issues and other side effects when used long-term. Pranayama, on the other hand, improves circulation, reduces inflammation, and enhances flexibility through better oxygenation of tissues. A study by Sharma *et al.* (2018) ^[3] found that women practicing Nadi Shodhana and Anulom Vilom (alternate nostril breathing) experienced a reduction in joint pain and stiffness, with improved mobility. Unlike NSAIDs, which only provide symptomatic relief, Pranayama offers a long-term, side-effect-free solution for managing joint discomfort.

Table 1: Comparison of the efficacy of Pranayama with conventional medical treatments for managing psychological and physical symptoms

Aspect	Pranayama	Conventional Medical Treatments
Relief Speed	Gradual improvement with consistent practice over time	Fast-acting relief (e.g., HRT, antidepressants show quick effects)
Anxiety and Depression	Reduces anxiety and depression through relaxation techniques, regulating the nervous system (e.g., Nadi Shodhana, Bhramari)	Antidepressants (SSRIs, SNRIs) provide rapid relief but have side effects such as drowsiness, weight gain, and dependency
Mood Swings	Stabilizes mood by calming the nervous system and balancing Vata dosha	HRT can alleviate mood swings but poses long-term risks like breast cancer and stroke
Hot Flashes	Reduces intensity and frequency of hot flashes (e.g., Sheetali, Nadi Shodhana)	HRT is highly effective in reducing hot flashes but increases risks of cardiovascular disease and cancer with long-term use
Insomnia/Sleep Disturbances	Improves sleep quality by calming the mind and body (e.g., Ujjayi, Bhramari)	Sedatives provide quick sleep relief but may cause dependency and grogginess
Fatigue	Increases energy and reduces fatigue by enhancing oxygenation (e.g., Kapalabhati, Bhastrika)	Fatigue relief from HRT and medications is variable and can cause side effects such as dizziness or sleep disruptions
Joint Pain and Stiffness	Reduces inflammation and improves mobility through improved circulation (e.g., Nadi Shodhana)	Pain relievers and anti-inflammatories provide immediate relief but can have long-term side effects (gastrointestinal, dependency)
Weight Gain	Helps regulate metabolism and supports gradual weight management (e.g., Kapalabhati stimulates digestion)	HRT may help prevent weight gain but carries risks of cancer and heart disease with long-term use
Cardiovascular Health	Improves circulation, lowers blood pressure, and strengthens heart (e.g., Ujjayi, Anulom Vilom)	HRT may improve cardiovascular health in the short term but increases long-term risks of heart disease and stroke
Long-Term Health Risks	No known side effects, safe for long-term practice	HRT, antidepressants, and sedatives carry long-term health risks like cancer, stroke, cardiovascular diseases, and dependency
Holistic Benefits	Addresses root causes (dosha imbalances), promotes overall well-being and longevity	Primarily addresses symptoms without addressing underlying imbalances
Sustainability	Can be practiced daily for long-term health benefits, sustainable approach	Not sustainable for long-term use due to health risks associated with prolonged medication intake
Stress Reduction	Highly effective in reducing stress hormones (e.g., cortisol) naturally	Conventional treatments (antidepressants) may reduce stress but often come with side effects like drowsiness and dependency
Self-Management and Empowerment	Encourages self-awareness and personal control over health	Relies on medication and external medical interventions for relief

In terms of weight gain, which is a common concern during menopause due to slower metabolism, conventional treatments like HRT may help in preventing weight gain by regulating hormones. However, the risks associated with HRT, such as cancer and heart disease, make it a less desirable option for many women. Pranayama, particularly Kapalabhati, has been shown to support metabolism and assist in weight management by stimulating the digestive system. Although the weight loss effects of Pranayama are more gradual compared to conventional treatments, they are sustainable and without the risks associated with hormone therapies. A study by Pal *et al.* (2019) [2] reported improved metabolism and better weight control in menopausal women who practiced Kapalabhati regularly.

Finally, cardiovascular health is a significant concern for menopausal women, as declining estrogen levels can increase the risk of heart disease. While HRT has been shown to protect against cardiovascular issues in the short term, long-term use raises the risk of heart disease, stroke, and blood clots. In contrast, Pranayama techniques like Ujjayi and Anulom Vilom have been shown to improve heart health by regulating blood pressure, improving circulation, and reducing stress. A study by Gupta and Sharma (2019) [4] found that women practicing these techniques had improved cardiovascular profiles, with lower blood pressure and better cholesterol levels, making Pranayama a safer long-term option for heart health management during menopause.

Conclusion

This comparative study highlights the efficacy of

Pranayama as a natural and holistic approach to managing both the psychological and physical symptoms of Artava Nivriti (Menopause). While conventional medical treatments such as hormone replacement therapy (HRT) and antidepressants provide fast and effective symptom relief, they are often accompanied by significant long-term health risks, including cardiovascular issues, cancer, and dependency. Pranayama, in contrast, offers a slower but sustainable method of alleviating symptoms without the adverse effects associated with pharmaceuticals. Techniques like Nadi Shodhana, Bhramari, Ujjayi, and Kapalabhati have been shown in evidence-based studies to significantly reduce anxiety, improve mood, enhance sleep quality, alleviate hot flashes, reduce joint pain, and support cardiovascular health. Pranayama addresses the root causes of these symptoms by balancing the body's doshas and regulating the autonomic nervous system, promoting both mental and physical well-being.

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