Open Access, Peer Reviewed, Research Journal

Print & Online available on https://jesbulletin.in
Research Article

THE EFFECT OF BHRAMARI PRANAYAMA ON SLEEP QUALITY IN WOMEN: INSIGHTS FROM YOGA AND NEUROSCIENCE

Mrs. Shubhangi A. Dongaonkar
Email: shubhangi.82@gmail.com

Article Info

Received: 19/02/2025
Revised: 28/02/2025
Accepted:10/03/2025

Keywords: Women, Sleep, Quality of sleep, Yoga, Bhramri pranayama.

Abstract

Sleep plays a critical role in maintaining physical health, cognitive performance, and emotional well-being. Women frequently experience sleep disturbances due to hormonal fluctuations, lifestyle changes, and stress. While pharmacological interventions exist, they often carry side effects and risks of dependency. This study explores the impact of Bhramari Pranayama, a yogic breathing technique, on sleep quality in women. Drawing on insights from my research study on yoga and sleep science for women, this article synthesizes existing literature and presents findings supporting Bhramari Pranayama as a natural, effective intervention. The review highlights how this practice influences neurophysiological mechanisms, including parasympathetic activation, melatonin regulation, and stress reduction. The study underscores the need for further research to establish Bhramari Pranayama as a complementary therapeutic approach to improving sleep quality in women

INTRODUCTION:

The Science of Sleep and Its Importance for Women

Sleep consists of different stages, including rapid eye movement (REM) sleep and non-REM sleep, both of which are critical for memory consolidation, emotional processing, and physical restoration. Poor sleep quality can lead to a variety of health issues such as obesity, cardiovascular diseases, weakened immune function, and cognitive decline.

Sleep disturbances are increasingly prevalent among women, often linked to menstruation, menopause, stress, and lifestyle factors. This study emphasizes the detrimental effects of poor sleep on cognitive function, mental health, and overall well-being. Concurrently, yoga research highlights Bhramari Pranayama as a promising technique for sleep improvement. This paper examines the efficacy of Bhramari Pranayama by integrating findings from neuroscience, sleep medicine, and yoga therapy.

Sleep Physiology and Disorders in Women

Sleep deprivation affects brain function, emotional regulation, and physical health. Women are disproportionately affected by insomnia and sleep fragmentation due to hormonal shifts. Studies indicate that declining estrogen and progesterone levels contribute to disrupted circadian rhythms and increased susceptibility to stress, both of which impair sleep quality. Sleep disorders such as obstructive sleep apnea and restless legs syndrome are also more prevalent in women, exacerbating sleep issues.

BhramariPranayama: Mechanisms and Benefits

Bhramari Pranayama, or 'humming bee breath,' is a yogic technique characterized by slow, deep breathing accompanied by a gentle humming sound during exhalation. Research suggests that this practice activates the parasympathetic nervous system, promoting relaxation and reducing cortisol

levels. Studies using heart rate variability (HRV) analysis demonstrate significant improvements in autonomic balance, which correlates with enhanced sleep quality.

Empirical Evidence on Bhramari Pranayama and Sleep

Recent clinical trials have examined the effects of Bhramari Pranayama on sleep quality. A study conducted on women found that regular practice improved sleep latency, sleep duration, and subjective sleep satisfaction, as measured by the Pittsburgh Sleep Quality Index (PSQI). Additionally, research comparing Bhramari practitioners to control groups indicates reduced symptoms of insomnia, anxiety, and depression—key contributors to sleep disturbances.

Comparison with Pharmacological and Behavioural Interventions

Conventional treatments for sleep disorders include pharmacological solutions (e.g., benzodiazepines, melatonin supplements) and behavioural therapies (e.g., cognitive-behavioural therapy for insomnia, sleep hygiene practices). While effective, medications often lead to dependency and adverse side effects. In contrast, Bhramari Pranayama offers a non-invasive, cost-effective alternative that aligns with holistic wellness principles.

Implications for Future Research and Practice

Despite promising findings, further randomised controlled trials (RCTs) with larger sample sizes are necessary to validate the efficacy of Bhramari Pranayama. Future research should explore its long-term impact on neuroplasticity, hormonal regulation, and cognitive function.

CONCLUSION:

Incorporating Bhramari Pranayama into daily practice may serve as a valuable tool for women struggling with sleep disturbances. By enhancing parasympathetic activity, reducing stress, and improving sleep architecture, this practice aligns with both ancient yogic wisdom and contemporary neuroscience. Future interdisciplinary research can further elucidate the mechanisms underlying these benefits, paving the way for integrative sleep medicine.

REFERENCES:

Walker, M. (2017). Why We Sleep: Unlocking the Power of Sleep and Dreams, Scribner. Wang, W. L., Chen, K. H., Pan, Y. C., Yang, S. N., & Chan, Y. Y. (2020). The effect of yoga on sleep quality and insomnia in women with sleep problems: A systematic review and meta-analysis. Sleep Medicine Reviews, 53, 101334.

Jagadeesan, T., R, A., Kannan, R., Jain, T., et al. (2021). Effect of Bhramari Pranayama intervention on stress, anxiety, depression, and sleep quality among COVID-19 patients in home isolation. Complementary Therapies in Medicine, 60, 102756.

Polo-Kantola, P., Laine, A., Aromaa, M., Rautava, P., Markkula, J., Vahlberg, T., & Sillanpää, M. (2014). A population-based survey of sleep disturbances in middle-aged women–Associations with health, health related quality of life and health behavior. *Maturitas*, *77*(3), 255-262.

Bei, B., Coo, S., Baker, F. C., & Trinder, J. (2015). Sleep in Women: A Review. *Australian Psychologist*, *50*(1), 14–24.

Hsu, H. C., & Lin, M. H. (2005). Exploring the quality of sleep and its related factors among menopausal women. *Journal of Nursing Research*, *13*(2), 153-164

Cite this article:
Shubhangi A. Dongaonkar 2025. The Effect of Bhramari Pranayama on Sleep Quality in Women: Insights from Yoga and Neuroscience. *JES Bulletin*, 3(2):323-324