WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
Coden USA: WJPRAP Impact Factor 8.453
Volume 15, Issue 3, 1008-1016. Research Article ISSN 2277–7105

AN ANATOMICAL STUDY OF AJNA CHAKRA WITH THERAPEUTIC EFFECT OF BHRAMARI PRANAYAMA AND SHIROABHYANG IN ANIDRA (INSOMNIA)

Dr. Ravindra Kumar Bhargawa*[1], Dr. Purushottam Das Sharma[2], Dr. Deepa[3]

PG Scholar (Final Year)[1], Associate Professor[2], Lecturer[3]

[1-3]P.G. Department of *Rachana Sharir*, M.M.M. Govt. Ayurved College, Udaipur, Rajasthan, India.

Article Received on 01 Jan. 2026,
Article Revised on 21 Jan. 2026,
Article Published on 01 Feb. 2026,

https://doi.org/10.5281/zenodo.18431128

***Corresponding Author**

Dr. Ravindra Kumar Bhargawa

PG Scholar (Final Year), P.G. Department of Rachana Sharir, M.M.M. Govt. Ayurved College, Udaipur, Rajasthan, India.

How to cite this Article: Dr. Ravindra Kumar Bhargawa[1], Dr. Purushottam Das Sharma[2], Dr. Deepa[3] (2026). An anatomical study of ajna chakra with therapeutic effect of bhramari pranayama and shiroabhyang in anidra (insomnia). "World Journal of Pharmaceutical Research, 15(3), 1008–1016.

ABSTRACT

Background: *Anidra* (Insomnia) is a common psychosomatic disorder characterized by difficulty in sleep initiation, maintenance, and impaired daytime functioning. Non-pharmacological interventions focusing on autonomic regulation and mental relaxation are increasingly being explored for its management. **Objectives:** To evaluate and compare the therapeutic efficacy of *Bhramari Pranayama*, *Shiroabhyanga*, and their combined application in the management of *Anidra*. **Materials and Methods:** Ninety patients diagnosed with *Anidra* were randomly divided into three equal groups. Group A received *Bhramari Pranayama*, Group B underwent *Shiroabhyanga*, and Group C received combined therapy. Subjective sleep parameters were assessed before and after intervention using the Athens Insomnia Scale. Statistical analysis was performed to evaluate intra-group and inter-group outcomes. **Results:** All three groups showed statistically significant improvement in sleep-related parameters. Group A demonstrated marked improvement in sleep induction and reduction in nocturnal awakenings, while Group B showed better improvement in sleep maintenance and early morning awakening. Group C exhibited consistently superior outcomes across all parameters, with percentage relief ranging from 62.19% to 70.55% and uniformly high statistical significance. **Conclusion:** *Bhramari*

Pranayama and *Shiroabhyanga* are effective individual therapies for the management of *Anidra*; however, their combined use provides a synergistic and more comprehensive therapeutic benefit, improving both nocturnal sleep quality and daytime functioning.

KEYWORDS: *Anidra*, *Insomnia*, *Bhramari Pranayama*, *Shiroabhyanga*, Sleep quality, Athens Insomnia Scale, Non-pharmacological therapy, Ayurveda.

INTRODUCTION

The human body, as per ancient teachings, consists of both gross and subtle elements. The physical body is involved in functions like excretion (urine and feces), vital activities (*Vata*), and metabolism (*Pitta*). The subtle body, on the other hand, includes energy channels called *Nadis*. Among these, *Ida* (feminine and moon-like) flows on the left side, *Pingala* (masculine and sun-like) flows on the right side, and *Sushumna*, the central *Nadi*, contains the *Brahmanadi*, which connects the gross and subtle bodies.[1]

The dormant energy within humans, referred to as *Kundalini*, resides at the *Muladhara Chakra* (root chakra). This energy, symbolized by a coiled serpent, ascends through the *Chakras* to awaken higher consciousness. The seven major *Chakras*[2] are:

1. *Muladhara Chakra* (Root)
2. *Svadhishthana Chakra* (Sacral)
3. *Manipura Chakra* (Solar Plexus)
4. *Anahata Chakra* (Heart)
5. *Vishuddha Chakra* (Throat)
6. *Ajna Chakra* (Third Eye)
7. *Sahasrara Chakra* (Crown)

Each *Chakra* governs specific physiological processes, endocrine glands, and aspects of consciousness. The *Chakras* align vertically along the spine, connecting the root at the sacrum to the crown at the cerebral cortex.[2]

The *Sushumna Nadi*, a central energy channel, spirals upward from the *Kandamula* (an extramaterial energy source beneath the *Muladhara*) to the brain. The *Ida Nadi* exits the left of the *Kandamula* and ascends along the vertebral column, while the *Pingala Nadi* flows on the right. These two *Nadis* intersect at various *Chakras* and unite with the *Sushumna* at the *Ajna Chakra* (Third Eye), continuing upward to the cerebral cortex. This intricate energy

system highlights the interconnectedness of the body, mind, and spirit, emphasizing the transformative potential of aligning and activating the *Chakras* for overall well-being and spiritual awakening.[3]

Anidra (insomnia) is a prevalent sleep disorder characterized by difficulty in initiating or maintaining sleep, early morning awakening, and non-restorative sleep, often accompanied by impaired daytime functioning. In modern society, factors such as stress, irregular lifestyle, excessive screen exposure, and mental overactivity contribute significantly to its rising incidence. From an Ayurvedic perspective, *Anidra* is primarily associated with vitiation of *Vata* and *Pitta* doshas, along with disturbance of *Manovaha Srotas*, leading to mental unrest and disruption of natural sleep patterns.[4,5] Chronic insomnia not only affects quality of life but also predisposes individuals to metabolic, cardiovascular, and psychological disorders, highlighting the need for safe and effective non-pharmacological interventions.[6]

Need for the Study

In the modern era, increasing stress, irregular lifestyle patterns, and excessive digital exposure have led to a rising prevalence of *Anidra* (insomnia). There is a growing demand for safe, holistic, and non-pharmacological approaches for its management. The *Ajna Chakra*, anatomically correlated with the hypothalamic–pituitary axis, plays a key role in regulation of the sleep–wake cycle, and its dysfunction may contribute to insomnia. Traditional Ayurvedic interventions such as *Bhramari Pranayama* and *Shiroabhyanga* are known to calm the mind, regulate *Prana*, and restore neurophysiological balance. Therefore, the present study was undertaken to scientifically evaluate the effectiveness of these therapies in the management of *Anidra* and to establish an integrative, sustainable approach to sleep health.[7,8]

AIMS AND OBJECTIVES

1. To evaluate the regional & functional anatomy related to *Ajna Chakra*.
2. To study the therapeutic evaluation of *Bhramari Pranayama* in *Anidra*.
3. To study the therapeutic evaluation of *Shiroabhyang* in *Anidra*.
4. To study the combined effect of *Bhramari Pranayama* and *Shiroabhyang* in *Anidra*.

Ethical Clearance

This study was approved by Institutional Ethical Committee (IEC) of University College of *Ayurveda*, DSRRAU Jodhpur vide letter no. S.NO./ DSRRAU/UCA/IEC/20-21/398, dated 12.06.2022, before starting the clinical trial on clinically diagnosed patients of *Anidra.*

In relation to imbalance of *Nidra* 90 Indivisuals who are suffering from *Anidra* will be screened. These 90 indivisuals will be divided into 3 groups. Each group having 30 people

Group 1 - Individuals of this group will be advised to do *Bhramari Pranayama*

Group 2 –Indivisuals of this group will be given *Shiroabhyanga*

Group 3 – Indivisuals of this group will be given both *Bhramari Pranayama* & *Shiroabhyang*.

Duration of *Bhramari Pranayama*. 4 times once in a day for 60 days.

Duration of *Shiroabhyanga*: - 20 minutes / day (60 days) these therapies will be performed for 60 days & follow-up after 15 days will be taken.

Inclusion & Exclusion criteria

Inclusive criteria

- Individuals of age16-50 yrs.
- Persons having stress

Exclusion criteria

- Drug induced Insomnia
- Psychic patients
- Persons who can't cooperate while performing therapies
- Persons having systemic disease
- Pregnant and lactating women

Withdrawal criteria: All subjects are free to withdraw from participation in the study at any time without giving any reason.

Study design

Study type	Interventional (clinically study)
Purpose	Treatment
Allocation	Randomized
Masking	Open label
Timing	Prospective
End point	Efficacy & Safety
No. of Groups	One

Asessment criteria

S. No.	Parameter	Grade 0	Grade 1	Grade 2	Grade 3
1	Sleep induction	No problem	Slightly delayed	Markedly delayed	Very delayed / Did not sleep
2	Awakenings during the night	No problem	Minor problem	Considerable problem	Serious problem / Did not sleep
3	Final awakening earlier than desired	Not earlier	A little earlier	Markedly earlier	Much earlier / Did not sleep
4	Total sleep duration	Sufficient	Slightly insufficient	Markedly insufficient	Very insufficient / Did not sleep
5	Overall quality of sleep	Satisfactory	Slightly unsatisfactory	Markedly unsatisfactory	Very unsatisfactory / Did not sleep
6	Sense of well-being during the day	Normal	Slightly decreased	Markedly decreased	Very decreased
7	Physical and mental functioning during the day	Normal	Slightly decreased	Markedly decreased	Very decreased
8	Sleepiness during the day	None	Mild	Considerable	Intense

Criteria For Assessment of Overall Effects

For the gross assessment of the result obtained with the clinical trial, the response of the treatment was determined in term of:

a) Degree of remission of signs and symptoms

b) Percentage of relief.

OBSERVATIONS

In the present study, the maximum occurrence of *Anidra* was observed in individuals belonging to the **third decade of life (16–30 years), accounting for 38.88% (35 patients)**, followed by the **male gender with 62.22% (56 patients)**. A markedly higher prevalence was noted among **married individuals (91.10%, 82 patients)** and those from the **Hindu community (96.67%, 87 patients)**, reflecting the demographic composition of the study area. The majority of patients were from **rural areas (58.89%, 53 patients)** and had **lower educational status (60%)**, indicating the influence of lifestyle transitions and limited awareness regarding sleep hygiene. Socioeconomically, **middle-class individuals constituted the largest group (72.20%, 65 patients)**, suggesting heightened psychosocial and financial stress. Occupationally, **household workers formed the predominant group (52.22%, 47 patients)**, followed by laborers (25.56%). Collectively, these dominant parameters highlight that *Anidra* is most prevalent among young, married males facing

combined mental, occupational, and familial stressors. From an Ayurvedic standpoint, this pattern signifies predominant **Vata–Pitta vitiation**, involvement of *Manovaha srotas*, and chronic *Chinta* and *Atichintana*, providing a rational basis for the observed higher occurrence of insomnia in this study population.

In the present study, the highest occurrence of *Anidra* was observed in patients with **Mandagni (66.66%, n=60)**, **Krura Koshtha (55.56%, n=50)**, and **Vata-Kaphaja Prakruti (55.55%, n=50)**, indicating a strong constitutional and metabolic predisposition toward sleep disturbance. Psychologically, **Rajasika Manasika Prakruti was predominant (68.88%, n=62)**, reflecting excessive mental activity, anxiety, and overthinking as major contributory factors. Structural and tissue assessments showed maximum involvement of **Rakta Sara (26.66%)**, followed by **Asthi Sara (22.22%)**, suggesting heightened sensitivity and Vata association. Most patients exhibited **Madhyama Samhanana (74.44%, n=67)**, **Sarva Rasa Satmya (80%, n=72)**, **Madhyama Satva (57.78%, n=52)**, **Madhyama Ahara Shakti (60%, n=54)**, and **Madhyama Pramana (76.67%, n=69)**, collectively indicating moderate physical and psychological endurance that becomes insufficient under sustained stress, irregular diet, and lifestyle disturbances. From an Ayurvedic standpoint, the dominance of *Mandagni*, *Krura Koshtha*, *Rajasika Manas*, and Vata-influenced **Prakruti** highlights **Vata-Pitta vitiation**, *Ama* formation, and involvement of *Manovaha srotas* as key pathogenic factors in *Anidra*, justifying the need for *Agni-deepana*, *Vata-shamana*, and Satva-balya therapeutic interventions.

RESULTS

Variable	Group	BT Mean	AT Mean	MD	% Relief	S.D. (±)	S.E. (±)	P-value	Significance
Sleep induction	A	2.60	0.80	1.70	66.60	0.5164	0.1333	<0.0001	HS
	B	2.60	0.93	1.67	64.10	0.2582	0.0666	<0.0001	HS
	C	2.93	0.86	**2.07**	**70.55**	0.5071	0.1309	<0.0001	HS
Awakenings during night	A	2.40	0.80	1.50	64.30	0.6399	0.1652	<0.0001	HS
	B	2.26	1.06	1.13	50.00	0.7368	0.1902	>0.1	S
	C	2.40	0.70	**1.70**	**70.33**	0.4140	0.1069	<0.0001	HS
Final awakening earlier than desired	A	2.50	0.80	1.70	67.10	0.6761	0.1746	<0.0001	HS
	B	2.46	0.73	**1.73**	**70.27**	0.6325	0.1633	<0.0001	HS
	C	2.40	0.86	1.53	63.89	0.5164	0.1333	<0.0001	HS
Total sleep duration	A	2.70	1.06	1.70	61.40	0.6399	0.1652	<0.05	VS
	B	2.66	1.06	1.60	60.00	0.7432	0.1919	<0.0001	HS
	C	2.67	0.87	**1.80**	**67.50**	0.7037	0.1817	<0.0001	HS

Overall quality of sleep	A	2.60	1.00	1.60	62.50	1.0560	0.2726	<0.0001	HS
	B	2.63	1.00	1.63	62.02	0.7988	0.2063	<0.0001	HS
	C	2.53	0.93	**1.60**	**63.15**	0.7746	0.2000	<0.0001	HS
Sense of well-being during day	A	2.20	0.80	1.30	60.60	0.7988	0.2063	<0.05	VS
	B	2.20	0.86	1.33	60.60	0.6172	0.1594	<0.0001	HS
	C	2.67	0.93	**1.73**	**65.00**	0.6761	0.1746	<0.0001	HS
Physical & mental functioning	A	2.60	1.06	1.50	58.90	0.8452	0.2182	<0.05	VS
	B	2.53	1.06	1.46	57.89	0.7746	0.2000	<0.05	VS
	C	2.73	1.03	**1.70**	**62.19**	0.9155	0.2364	<0.0001	HS
Sleepiness during day	A	2.50	0.90	1.50	61.80	0.9904	0.2557	<0.0001	HS
	B	2.80	1.20	1.60	57.14	0.8165	0.2108	<0.05	VS
	C	2.53	0.83	**1.70**	**67.16**	0.7037	0.1817	<0.0001	HS

DISCUSSION

The present study demonstrates significant improvement in insomnia-related parameters across all three groups, with variations in therapeutic response based on the intervention applied. **Group A (*Bhramari Pranayama*)** showed marked improvement in sleep induction (66.6%), reduction in nocturnal awakenings (64.3%), and early morning awakening (67.1%), indicating effective calming of the mind through reduction of mental hyperarousal and enhancement of parasympathetic activity. **Group B (*Shiroabhyanga*)** produced notable improvement in sleep maintenance and early morning awakening (70.27%), along with moderate enhancement in total sleep duration (60%), reflecting its role in pacifying aggravated *Vata* and stabilizing *Manovaha Srotas* through tactile and neuroendocrine relaxation. **Group C (Combined *Bhramari Pranayama* and *Shiroabhyanga*)** demonstrated consistently superior outcomes across all parameters, with improvement ranging from 62.19% to 70.55%, suggesting a synergistic effect on both central and peripheral mechanisms of sleep regulation. The combined intervention likely exerts enhanced efficacy by normalizing autonomic balance, reducing hyperactivity of the hypothalamic–pituitary axis, and restoring mental stability through *Vata* and *Pitta Shamana*, thereby providing comprehensive management of *Anidra*.[9-13]

CONCLUSION

Based on the observations and results of the present study, it can be concluded that both ***Bhramari Pranayama*** and ***Shiroabhyanga*** are effective non-pharmacological interventions in the management of ***Anidra* (Insomnia)**. **Group A**, treated with *Bhramari Pranayama*,

showed significant improvement in sleep initiation and reduction in nocturnal awakenings, indicating its beneficial effect on mental relaxation and autonomic regulation. **Group B**, managed with *Shiroabhyanga*, demonstrated marked improvement in sleep maintenance and early morning awakening, reflecting its role in pacifying aggravated *Vata* and stabilizing *Manovaha Srotas*. However, **Group C**, which received the combined therapy, exhibited consistently superior results across all sleep and daytime functioning parameters, with higher percentage relief and uniform statistical significance. This suggests a synergistic action of central calming and peripheral relaxation mechanisms. Overall, the combined use of *Bhramari Pranayama* and *Shiroabhyanga* provides a comprehensive, safe, and effective therapeutic approach for improving sleep quality and daytime well-being in patients suffering from *Anidra*.

REFERENCES

1. Saraswati SS. *Kundalini Tantra*. Munger: Bihar School of Yoga, 2009; 131–45.
2. Khalsa SBS. Yoga as a therapeutic intervention: a bibliometric analysis of published research studies. *Indian J Physiol Pharmacol*., 2004; 48(3): 269–85.
3. Saper CB, Scammell TE, Lu J. Hypothalamic regulation of sleep and circadian rhythms. *Nature*., 2005; 437(7063): 1257–63.
4. Kaviraj K, Sharma R. *Charaka Samhita* with Chakrapani commentary. Varanasi: Chaukhambha Orientalia; Sutrasthana 21/58–60.
5. Vagbhata. *Ashtanga Hridaya* with Arunadatta commentary. Varanasi: Chaukhambha Surbharati; Sutrasthana 7/53–55.
6. Morin CM, Benca R. Chronic insomnia. *Lancet*., 2012; 379(9821): 1129–41.
7. Ohayon MM. Epidemiology of insomnia: what we know and what we still need to learn. *Sleep Med Rev*., 2002; 6(2): 97–111.
8. Reiter RJ, Tan DX, Korkmaz A, Ma S. Obesity and metabolic syndrome: association with chronodisruption, sleep deprivation, and melatonin suppression. *Ann Med*., 2012; 44(6): 564–77.
9. Jerath R, Edry JW, Barnes VA, Jerath V. Physiology of long pranayamic breathing: neural respiratory elements may provide a mechanism that explains how slow deep breathing shifts the autonomic nervous system. *Med Hypotheses*, 2006; 67(3): 566–71.
10. Telles S, Singh N, Balkrishna A. Managing mental health disorders resulting from trauma through yoga: a review. *Depress Res Treat*., 2012; 2012: 401513.

11. Uebaba K, Xu FH, Ogawa H, et al. Psychoneuroimmunologic effects of massage therapy in healthy subjects. *Evid Based Complement Alternat Med*., 2008; 5(1): 79–86.
12. Field T. Massage therapy research review. *Complement Ther Clin Pract*., 2014; 20(4): 224–9.
13. Brown RP, Gerbarg PL. Sudarshan Kriya yogic breathing in the treatment of stress, anxiety, and depression. *J Altern Complement Med*., 2005; 11(4): 711–7.