

CONCEPTUAL APPRAISAL OF DAILY REGIMEN TO PREVENT AND CURE NIDRANASH WSR TO INSOMNIA

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ABSTRACT

In today's era, the incidence of insomnia has been increased across India and throughout the world, affecting not only old persons but also the middle aged and young ones. *Nidra*/Sleep is the normal physiological phenomena which has a restorative effect on body and mind. Lack of proper sleep hampers the quality of life, even if manifests at young age, its even more hazardous. Today's fast, changing and competitivelifestyles, increased screen times of mobile, TV, ipods, unawareness regarding sleep hygiene are the triggering factors. Among *dincharya* regimen, some remarkable regimens are given which boosts sleep. Intoday, s era its an urgent need to improve and update lifestyles with these procedures to prevent and cure insomnia as a substitute or adjuvant of other medications. **Aims and objectives:** 1) To study the importance and causes of *swabhaviknidra*. 2) To study in detail the causes of *Anidra* (insomnia). 3) To study the importance and mode of action of remarkable daily regimens (*dincharya* procedure) wsr to prevent and cure insomnia. 4) To develop a "*Dincharya* protocol Model" for the management of insomnia. **Materials and methods:** Various ayurved classics and articles published till date were reviewed to update the importance and understand the mode of action these of *dincharya* procedures wsr to enhance good sleep.

KEYWORDS: *Dincharya*, *nidra*, *anidra*, *nidranash*, daily regimen for sleep, insomnia.

1. INTRODUCTION

According to *ayurveda* the science of life, *swasthya* depends upon the tripod of life i. e. *ahara*, *nidra* (*swapan*) and *brahmcharya*. Primary emphasis has been given on the preventive and health promotive measures, improving all the dimensions of health i. e. physical, mental, social and spiritual wellbeing. To serve this purpose various regimens such as *dincharya*, *ratricharya*, *ritucharya* have been explained by various *acharya's* in various *ayurvedic* literatures, "*swasthahsadatisthati*". The second pillar of the tripod, *Nidra* is very important regimen of day to day life, if not taken properly cause simply uneasiness, disturbed work efficiency in day time to various severe diseased conditions. Between 10% and 30% of adults have insomnia at any given point in time and up to half of people have insomnia in a given year. About 6% of people have insomnia that is not due to another problem and lasts for more than a month. People over the age of 65 are affected more often than younger people. Females are more often affected than males.^[16] Changing lifestyles, excessive use of mobiles, televisions, not having awareness and realization of proper sleeping habits produces sleeping disorders even at younger age group now a days. The commonest disorder insomnia, is

highly associated with psychiatric disorders and is a major triggering factor for the development of anxiety, depression, and even suicide.^[3, 4]

Atichinta, *atikrodha*, *manastap*, *lobh*, *harsha*, *rukhaannaseven*, *ativyayam*, *atibhaya* etc are told as *nidan* of *anidra*. Intoday's era, chronic insomnia is a common sleep disorder and there is a deep felt need to develop the complementary therapeutic treatment options rather than the existing treatment options like hypnotics, antidepressants, neuroleptics etc. sleeping pills may help, they are associated with addiction, loss of memory many times.^[12, 13, 14, 15] Studies have shown sleeping pills users are at a greater mortality risk. Many medications are safe for short term use but when taken for years produce unwanted side effects like many psychological manifestations like fatigue, high blood pressure, lack of concentration at work, anorexia etc which ultimately hampers the quality of life. , even increase cancer risk. These are recommended for 4-5 weeks. Although we find the detailed descriptions of various healthy regimens in literature, there is lack of awareness in knowing these *dincharya* procedures which are closely related to promote good natural sleep of nighttime. In this article, an attempt has been to compile

the information and make the scientific report of these applications enhancing night sleep.

Among many *dincharya* regimen *pratimarshnasya*, *shiroabhyanga*, *padaabhyanga*, *sanvahan*, *abhayanga*, *snan*, *udvartan*, *utsadana* has been documented to be used for good sleep by sages. The objective of this study was to develop “*The Dincharya Model*” in management of insomnia patients. This model was developed using inputs from reviewing *ayurvedic* literatures. According to ancient Indian literatures, *Dincharya* regimen described must be followed by every individual to maintain healthy

forever.^[17] And these are to be followed everyday continuously without any interruptions to get good health.^[18] Benefits of Good sleep, second pillar of tripod, is directly responsible for mental and physical happiness, physical health, increased immunity and long life^[19] In the patients of sleep disorders, night by night the patient gets deprived with these benefits of natural sleep which in turn may lead to cause other morbid conditions.^[20] Among the various treatment module of *Nidra* according to *Charak*⁵ are described among daily *dincharya* regimen which must be followed everyday without fail.

Daily regimen included in treatment module of Anidra/Nidranash

Abhyanga, Shiroabhyanga, Murdhnaitailnishevanam, Padaabhyanga, Udvartan, Utsadana, Samvahan, Snaan, Lephshirovadanasya, Karnpuran, Pratimarshanasya

2. AIMS AND OBJECTIVES

- 1) To study the importance and causes of *swabhaviknidra*.
- 2) To study in detail the causes of *Anidra* (insomnia).
- 3) To study the importance and mode of action of remarkable daily regimens (*dincharya* procedure) wsr to prevent and cure insomnia.
- 4) To develop a “*Dincharya* protocol Model” for the management of insomnia.

3. Cause of Nidra

Before applying these daily regimen protocols its very important to understand that *Nidan* or cause of *nidra* is

swabhav^[21] i. e. it occurs naturally to a healthy individual when *sangayavahistrotus* by *kaph dosh* and *chemasthan* by *hridyaget* overlapped by *tam doshanidra* occurs. According to modern science also, natural sleep is the normal manifestation of one stage in the rhythmical activity of nerve cells.^[22] The phenomena of sleep which has interested physiologists for a long time is the cause of sleep. This has been explained by many as the ischaemia of the brain but also studies have been able to show no changes in the cerebral oxygen consumption along with circulation during sleep. Theories of sleep are summarized in table.^[23]

THEORIES OF SLEEP		
OLD THEORY (Passive process)	NEW THEORY (Active process)	ASAYURVEDA
By Discharging of RAS neurons (reticular activating system) for many hours of wakefulness ↓ Fatigue of RAS neurons ↓ sleep	By Inducing inhibitory process. a) different mediators actively inhibit RAS sleep b) “Serotonin” secreting raphe fibres inhibit the RAS Sleep c) “Melatonin” hormone secreted by the pineal gland during darkness inhibit RAS sleep	<p>The Schematic Diagram of Samprapati of Nidranasha can be represented as follows</p>

Also, melatonin hormone secreted from the pineal gland may be synthesized from serotonin (i. e. precursor of melatonin), governs entire sleep-wake cycle, regulating body's biological clock.^[23] This internal clock helps to regulate mood, social behavior, appetite and digestion, sleep, memory, sexual desire and function. Lack of serotonin may lead to sleep disturbances associated with anxiety, low energy etc. Also in today's urbanized competitive lifestyles at all age groups especially at middle when sleep is deprived, it's an urgent need to adopt these *dincharya* regimens to one healthy as substitute of sleeping pills and other medications. Such patients can become addicted to habits of taking medications to induce finding it a easiest way. But only naturally induced sleep produces good and positive effects on body and mind.

4. Causes of Nidranash (Sleeplessness)

According to *charak, karya, kala, Vikarand prakurti* are the *hetu* of *nidra nasha*.^[5]

Anidra or *Nidranash* has been counted among 80 diseases due to *vata dosha* imbalance.^[6]

Shushrut says aggravated *vata* and *pitta dosh, manstap* (an aggravated state), *dhatukshaya* (loss of body tissues) and *abhighat* (injury) are described as sleep killing factors.^[24] Use of purgatives, emetics, fear, worry, smoking, blood-letting, fasting, uncomfortable bed, abundance of *satvika*, quality of mind.^[25] Poor sleep quality can occur as a result of, for example, restless legs, sleep apnea or major depression.^[10] Poor sleep quality is defined as the individual not reaching stage 3 or delta sleep which has restorative properties.

In today's urbanized lifestyle sleeping habits of people seems improper. Incidences of prolonged mobile/laptop/TV screentime, late dinner, late bed time, night shifts etc. has been increased. Ayurveda puts strictness on time of sleep (day/night), duration of sleep (*adhik/hin/samyag yoga*) as only *sanyog* of *nidra* provides all health benefits and longevity.^[26]

5. Benefits of good sleep (nidra)

Night sleep causes both physical and mental (*sukham*) happiness, nourishment (*pooshti*), strength (*bal*), virility (*vrishta*) and impotence (*kleebta*), *gyaan* (knowledge) depends upon sleep.^[26] Also brings *dhatu samyata*, restores drowsiness and natural equilibrium among different body tissues, promote good vision, complexion and improves digestive fire.^[29]

6. Demerits of bad sleep

Demerits of sleep manifests when the sleep is not practiced in a proper way depending on time of sleep, duration etc. otherwise exactly opposite to the merits, demerits manifest like misery (*dukhas*), emaciation (*karshayam*), weakness (*bala*), impotence (*kleebata*), *agyan* (ignorance) or death (*maran*).^[29] Ayurveda suggested that *diwas pawan* (Day sleep) is strictly

contraindicated in all healthy individual in all seasons except in summer season (*greeshmaritu*) (.....) Day sleep results in *halimak, sirahshool, staaimitya, gurugatrata, angamarda, agninas, hridayalepa* etc.... manifests.^[30]

7. DISCUSSION

Maintaining sleep hygiene and improving daily regimen are typically the first treatment for insomnia.^[31] Sleep hygiene includes a consistent bedtime, exposure to sunlight, a quiet and dark room, and regular exercise, light and healthy diet, comfortable bedding.^[34, 20]

Abhyanga

Abhyanga is followed daily as a part of *dincharya* it makes the man healthy by nourishing the tissues, gives strength and increases the *agni*.^[33]

It should be discussed to know how long the *abhyanga* should be performed as a part of daily routine to maintain a healthy life. The time duration taken by the oil to reach the hair follicles when *abhyanga* is performed for 300 matras (95) the oil reaches the skin, *raktadhatu, mamsadhatu, medodhatu, asthidhatu* is 400 (133 sec), 500 (160 sec), 600 (190 sec), 700 (228), 880 (240 sec) respectively and if *abhyanga* is continued for 900 matras (280 sec) it reaches *majjadhatu*.^[35]

Therefore as a daily routine 10 min is sufficient but for diseased condition 30-60 of *abhyanga* is needed.^[36] Along with *sarvanga abhyanga*, three body parts are especially given emphasis *shir (shiro abhyang)*,^[46] *karn (ears)*,^[47] and *pada (pada abhyanga)*.^{[48], [1], [2]} According to *Yogaratanakara* the person who massaged his/her feet daily regularly before sleeping, diseases never goes to that person just like snake which does not approach to eagles.^[37]

According to spiritual energy massage, outer rim of big toes is massaged to achieve the harmony of *AGNYA* chakra thereby making mind calm.^[38] Foot massage brings sleep as it has *shramha* effect (remove fatigue, numbness and softness of skin of feet).^[39, 40]

While *Snigdha guna* decreases. Oil massage to feet reduces the *ruksha guna* of *vata dosha* thereby facilitating good natural sleep.^[41, 52] excessive wake cycle *Ruksha Guna* of *vata dosha* increases and. According to *Marmavigyan*,^[42] *pada* and *shir* (opposite poles of body) are the important sites of *marma*. *Abhyanga* strokes and rubbing not only establish the free flow of energy but also controls *prana*. Through *prana* one can control sensory and motor organs, eventually entire mind body complex and release negative energy.

Hypothetically: massaging with moderate pressure increases *tryptophan*. According to National Sleep Foundation, *tryptophan* is an essential sleep inducing amino acid (protein) for producing melatonin and a small percentage in producing serotonin.^[43] *Abhyanga* reduces stress, strain, anxiety as it is evident to reduce

physiological variables like lowering cortisol, epinephrine and physical variables like heart rate, blood pressure etc.^[49]

Bathing

Many studies and researches have also been done in relation of bathing and sleep. The elder perceived either "good sleep" or "quickness of falling asleep" after the bathing condition. Evening warm bath by manipulating body temperature prior to sleep effect on passive body heating on passive temperature and sleep quality for healthy elderly with insomnia. (Liao WC. Int. J Nurs Stud. 2002). One reason for the effect is that warm water stimulates hypothalamus (thermoregulatory system) in the brain regulates body temperature including sleep-wake cycle. Hyperthermic action induces vasodilation and increase blood flow and metabolic waste elimination, which may afford physical refreshments, lowering stress, anxiety, depression etc (major factors disturbing good sleep), stimulation of Ant. hypothalamus leads to sleep and Post. hypothalamus is considered as wakefulness centre.^[44]

Pratimarshanasysa

Pratimarshnasya by *Anu* oil which shows *tridosahar* property, rectify *doshic* imbalances and boosts all the body parts above clavicle thereby improving their functionality.^[45] Chakradatt has told 15 *kala* for the administration of *pratimarshnasya*, among which at the end of day (before bedtime) it has a *strotoshudh* and *sukhnidradaya* effect^[50], 2-2 drops in each nostrils.

Udvartan

The procedure of massaging the whole body with *churna* below the neck in a direction opposite to the orientation of hair with some pressure is called *udvartan* and *utsadan* is done with *kalk*. In context with daily regimen, *udvartan* is done after *abhyanga*.^[7] Also, in context of *vyayam*, *gatrarmardan* term is used.^[8] Among various Therapeutic effects of *udvartan* *gaurvahr*, *vathar* and *strotorodhar* properties contribute to enhance blood circulation in the body boosting natural sleep.^[11]

8. CONCLUSION

Sarwanga, *Abhayanga*, *padaabhyang*, *shiroabhyanga*, *karpuran*, *udvartan*, *utsadan*, *snan*, are among the *dincharya* regimens which are meant not only to prevent insomnia but also has curative effects on insomnia. These are very easy, safe, cost effective, little time taking but very effective procedures if done in proper correct way daily as a part of healthy sleep habit or hygiene. The only thing lacking is education and awareness among community. To mark the importance of a good sleep, World Sleep Day is being organized every March since 2008. So, hypothetically it can be concluded that, these remarkable *Dincharya* regimen must be adopted as drugless therapy (*adravyabhutchikitsa*) and lifestyle modality which is the highest need of 21st century of to maintain positive total health, booting psycho-physical parameters, improve work efficiency, ultimately

economy of own country thereby just improving the GOOD NATURAL SLEEP (*swabhaviknidra*).^[51]

REFERENCES

1. Trikamji Yadavji Charak Samhita by Agnivesa Revised by Charak and Dridhabala with Ayurveda Shastri Brahmashankar Bhavprakash Chaukhama Sanskrit Sansthan Varanasi 8th Edition, 1993; 5(73): 115. (padaabhynga).
2. Prof. K. R. Shrikanth Murthy Astanga Samgraha of Vagbhata Vol. I fifth edition Chaukhambha Orientalia Varanasi, 2001; 3(59): 42-43. (padaabhynga) Dipika 4th edition by Chaukhambha Sanskrit Sansthan Varanasi, 11(35): 74.
3. National Institutes of Health. NIH state of the science statement on manifestations and management of chronic insomnia in adults. J Clin Sleep Med, 2005; 1: 412-421
4. Basta M, Chrousos GP, Vela-Bueno A, Vgontzas AN. Chronic insomnia and the stress system. Sleep Med Clin, 2007; 2: 279-291.
5. Trikamji Yadavji Charak Samhita by Agnivesa Revised by Charak and Dridhabala with Ayurveda-Dipika 4th edition by Chaukhambha Sanskrit Sansthan Varanasi, 21(57): 421.
6. Pt. Shastri K. N. & Dr. Chaturvedi D. N. Charaka Samhita 16th Edition, Chaukhamba Bharti Academy Varanasi Sutra Sthan, 1989; 20(11): 400.
7. Chakrapani on Charaka Samhita, Sutrasthana, Chapter 5/93, Vd. Harish Chandra Singh Kushwaha, Chaukhambha Orientalia, Varanasi.
8. Dalhana on Sushruta Samhita, Chikitsasthana, Chapter 24/51, Dr Kewal Krishan Thakral, Chaukhambha Orientalia, Varanasi.
9. -Chakrapani on Charaka Samhita, Sutrasthana, Chapter 5/93, Vd. Harish Chandra Singh Kushwaha, Chaukhambha Orientalia, Varanasi.
10. Tripathi Ravi Dutta Ashtanga Samgraha Revised edition Chaukhambha Sanskrit Pratishthan Delhi Sutra sthan, 1993; 9(55): 199.
11. Pulak Kantikar, Udvartana-Samvahana Vis-à-vis Effleurage, IAMJ, June-2015; 3(6).
12. "How Is Insomnia Treated?". NHLBI. December 13, 2011. Archived from the original on 28 July 2016. Retrieved 9 August 2016.
13. Qaseem A, Kansagara D, Forciea MA, Cooke M, Denberg TD (July 2016). "Management of Chronic Insomnia Disorder in Adults: A Clinical Practice Guideline From the American College of Physicians". Annals of Internal Medicine, **165**(2): 125-33. doi:10.7326/M15-2175. PMID 27136449.
14. Wilson JF (January 2008). "In the clinic. Insomnia". Annals of Internal Medicine, **148**(1): ITC13-1-ITC13-16. doi:10.7326/0003-4819-148-1-200801010-01001. PMID 18166757.
15. "Dyssomnias" (PDF). WHO. pp. 7-11. Archived (PDF) from the original on 2009-03-18. Retrieved 2009-01-25.

16. Roth T (August 2007). "Insomnia: definition, prevalence, etiology, and consequences". *Journal of Clinical Sleep Medicine*, 3(5 Suppl): S7–10. doi:10.5664/jcsm.26929. PMC 1978319. PMID 17824495.
17. Bhavmishra, Bhavaprakasha, Purvakhand 5/13, Commentary by BulusuSitaram, Vol- I, First Edition, ChaukhambhaOrientalia Varanasi 2006).
18. AcharyaSushruta. *Sushrutasamhita*. KavirajAmbikaDuttaShashtri. Editor. Vol I & II, Chaukhambha Sanskrit Sansthan, Varanasi, Reprint 2012 (SU. Chikitsa 24/3).
19. AcharyaSushruta. *Sushrutasamhita*. KavirajAmbikaDuttaShashtri. Editor. Vol I & II, Chaukhambha Sanskrit Sansthan, Varanasi, Reprint 2012 (Su. chi. 21/36-38).
20. Charak, Charaksamhita. vaidyaHarishchandra Singh kushwaha, chaukhambhaorientalia, Reprint edition 2016 (cha. su. 21/37).
21. AcharyaSushruta. *Sushrutasamhita*. KavirajAmbikaDuttaShashtri. Editor. Vol I & II, Chaukhambha Sanskrit Sansthan, Varanasi, Reprint 2012 (SU. sha 4/34).
22. PHYSIOLOGIC MANIFESTATIONS OF SLEEP. *JAMA*, 1931; 96(7): 531–532. doi:10. 1001/jama. 1931. 02720330051016.
23. Nitin Ashok John, CC CAHATTERJEE'S Human Physiology, Volume 2, CBS PUB & DIST PVT limited INDIA. 2019, 13TH Edition, CHAPTER 5.
24. AcharyaSushruta. *Sushrutasamhita*. KavirajAmbikaDuttaShashtri. Editor. Vol I & II, Chaukhambha Sanskrit Sansthan, Varanasi, Reprint 2012 (Su. Sa. 4/4).
25. Charak, Charaksamhita. vaidyaHarishchandra Singh kushwaha, chaukhambhaorientalia, Reprint edition 2016 (ch. su. 25/55-57).
26. Charak, Charaksamhita. vaidyaHarishchandra Singh kushwaha, chaukhambhaorientalia, Reprint edition 2016 charak sutra 21/36-38p 314).
27. Charak, Charaksamhita. vaidyaHarishchandra Singh kushwaha, chaukhambhaorientalia, Reprint edition 2016 (charak sutra21/36 pg 314).
28. AcharyaSushruta. *Sushrutasamhita*. KavirajAmbikaDuttaShashtri. Editor. Vol I & II, Chaukhambha Sanskrit Sansthan, Varanasi, Reprint 2012 (SU. Chikitsa 24/3).
29. AcharyaSushruta. *Sushrutasamhita*. KavirajAmbikaDuttaShashtri. Editor. Vol I & II, Chaukhambha Sanskrit Sansthan, Varanasi, Reprint, 2012; (su. chi. 24/88).
30. Charak, Charaksamhita. vaidyaHarishchandra Singh kushwaha, chaukhambhaorientalia, Reprint edition 2016 (ch. su. 21/45-49).
31. (NHLBI. December 13, 2011. Archived from the original on 28 July 2016. Retrieved 9 August 2016.) (Wilson JF (January 2008). "In the clinic. Insomnia". *Annals of Internal Medicine*, 148(1): ITC13–1–ITC13–16. doi:10.7326/0003-4819-148-1-200801010-01001. PMID 18166757).
32. (Wilson JF (January 2008). "In the clinic. Insomnia". *Annals of Internal Medicine*, 148(1): ITC13–1–ITC13–16. doi:10. 7326/0003-4819-148-1-200801010-01001. PMID 18166757).
33. Vagbhata, AstangaHrdayam, Vol. I. Srikanta Murthy KR, editor. 2nd ed. Krishnadas Academy; Varanasi, 1994; 273-274.
34. Acharya Vaghbhatt. *AstangaSangraha*. Atrideva Gupta. Editor. Vol. I & II, ChaukhambhaKrishnadas Academy, Varanasi; Printed, 2005; A. S. SU 3/120-122
35. sushrut. *sushrutasamhitaNibandhasangraha* commentary of DalhanaJadavjiTrikamji, Nrarayan Ramacarya, editors. 1st ed. Varanasi:ChowkhambhaKrishnadas Academy; 2004. Chikitsasthan, 24/30-34. pg. 488).
36. *AyurpharmInt. J Ayur All Sci*, 2012; 1(7): pg 166)
37. Vaidya Laksmipati Sastri, Yogratnakara, ChaukhambhaPrakashan, Varanasi, 2017, Dincharya Adhyayapoorvagata, verse no. 62, 63. page no. 61.
38. S. V. Govindan, Spritual energy massage. 1st ed. Varanasi, SarvaSevaSangh Prakashan, 2001, page no. 45).
39. Susruta, Kaviraja, Dr. AmbikadattaShastri, Sushruta-Samhita, vol. 1, ChikitsasthanaAdhyaya 24/70. Varanasi; ChaukhambhaSanskritaSansthana, 2012; 136.
40. VaidyaLaksmipatiSastri, Yogratnakara, ChaukhambhaPrakashan, Varanasi, 2017, DincharyaAdhyayapoorvagata, verse no. 61, page no. 60
41. Sushrutha. *SushrutaSamhita* with NibandhaSangraha, Commentary of Dalhana and Nyayachandrika ofGayadasa on Nidanasthana. Edited by AcharyaYadhavjiTrikamaji. 8th ed. ChaukhambhaOrientalia, Varanasi, 2005; 488.
42. Sushrutha. *SushrutaSamhita* with NibandhaSangraha, Commentary of Dalhana and Nyayachandrika ofGayadasa on Nidanasthana. Edited byAcharyaYadhavjiTrikamaji. 8th ed., ChaukhambhaOrientalia, Varanasi, 2005; 369.
43. (Typtophan-wikipedia, [https://en. m. wikipedia. org>wiki](https://en.m.wikipedia.org/wiki/typtophan) visited on date 17 Oct 19).
44. Sambulingham and PremaSambulingham, third edition, pg. 702, 703, 704
45. Charak, Charaksamhita. vaidyaHarishchandra Singh kushwaha, chaukhambhaorientalia, Reprint edition 2016, 9/116-117).
46. Charak, Charaksamhita. vaidyaHarishchandra Singh kushwaha, chaukhambhaorientalia, Reprint edition 2016 (ch. su. 5/81-83).
47. Charak, Charaksamhita. vaidyaHarishchandra Singh kushwaha, chaukhambhaorientalia, Reprint edition 2016karn (ears)(ch. su 5/84).
48. Charak, Charaksamhita. vaidyaHarishchandra Singh kushwaha, chaukhambhaorientalia, Reprint edition 2016karn (ears)pada (padaabhyanga)(ch. su 5/90-91).
49. T. Hernandez and M. Diego M, et al. Cortisol decreases and serotonin and dopamine increases following massage therapy. *Int J Neurosci*, 2005; 115: 1397-1413

50. AcharyaSushruta. *Sushrutasamhita*. Kaviraj Ambika Dutta Shashtri. Editor. Vol I & II, Chaukhambha Sanskrit Sansthan, Varanasi, Reprint 2012, su. chi. 40/53;chrakradutt nasyaadhikar, 73.
51. AcharyaCharaka. *CharakaSamhita*. Pt. RajeswaraDattaShastri, Editor. , ChaukhambhaBharati Academy, Varanasi, Reprinted 2011, Ch. su. 21/36.
52. Bagali, Sachin&Baragi, Umapati. (2018). Importance of Abhyanga in Today's Scenario. Journal of Ayurveda and Integrated Medical Sciences (JAIMS). 3. 10. 21760/jaims, v3i01. 11643.