

A REVIEW ON *NIDRANASHA* (INSOMNIA OR DISTURBED SLEEP) AND ITS AYURVEDIC MANAGEMENT

^{1*}Dr. Vidyanand Mohan MD (Ay.), ²Dr. Aparna Nandakumar MD (Ay.), ³Dr. Aneesh E.G MD (Ay.) and ⁴Dr. Abitha Edathadathil MD (Ay.)

¹Assistant Professor, Dept. of Samhita and Siddhanta, Faculty of Ayurveda, Gokul Global University, Sidhpur, Gujarat.

²Assistant Professor, Dept. of Rasashastra and Bhaishajyakalpana, Faculty of Ayurveda, Gokul Global University, Sidhpur, Gujarat.

³PhD Scholar, Dept. of Panchakarma, IPGTRA Jamnagar, Gujarat.

⁴Assistant Professor, Dept. of Panchakarma, Vishnu Ayurveda College, Shoranur, Kerala.

Article Received on
06 April 2020,

Revised on 27 April 2020,
Accepted on 18 May 2020

DOI: 10.20959/wjpr20206-17674

*Corresponding Author

**Dr. Vidyanand Mohan
MD (Ay.)**

Assistant Professor, Dept. of
Samhita and Siddhanta,
Faculty of Ayurveda, Gokul
Global University, Sidhpur,
Gujarat.

ABSTRACT

Sleep is much essential for the sustainment of our life. *Ayurveda* includes *Nidra* (sleep) as one among *Trayopastambha* (three sub-pillars of life). Sleep deprivation or disturbed sleep can produce ill effects in both physical and mental level. The pathological condition of deprived and disturbed sleep can be discussed under *Nidranasha* in Ayurvedic point of view. During earlier days, the major contributing factors for sleep deprivation or disturbed sleep were said to be old age and physical ailments. Sleep deprivation or sleep disturbances became ubiquitous when the mental stress surmounted the human lives rapidly. At present in this digital era, people are spending their major time in gadgets and other digital platforms. These technological innovations are remarkably helpful for easing and advancing our occupational

needs. Conversely, the same digital advancements are being misused by a majority of people to fulfil their needs of trivial importance. Addiction of mobile games, over use of social media platforms, etc. is some examples for the same. Bottom line of overuse and abuse of digital platform is the manifestation of cardinal life style disorders and mental disorders which negatively impinge the quality and quantity of our normal sleep as well. Sleep related problems linked with altered job patterns which are discussed under 'Shift work sleep

disorders' are inclusive of insomnia or sleep disturbances. Thus an attempt is made to analyze *Nidranasha* (insomnia or disturbed sleep) and its management in Ayurvedic perspective.

KEYWORDS: Insomnia, Disturbed Sleep, *Nidranasha*, *Ayurveda*.

INTRODUCTION

Nidra (sleep) is one among *Trayopastambha* (three sub-pillars of life) along with *Aahaara* (food) and *Abrahmacharya* (healthy practice of sex). It is a biological need of all living beings for the sustainment of life. Sleep can be defined as a state of active inhibition of the cortical mechanism. Its function is to protect nerve cells to become fresh.^[1] Ayurvedic literatures provide an elaborative description of *Nidra* (sleep) and its related components. *Acharya* also highlights about its judicious practice and condemn its suppression and inopportune practices. Moreover the lucid description about *Nidranasha* (insomnia or disturbed sleep) and its management shows light to the physician to tackle the systemic illnesses born out of insomnia or disturbed sleep.

Review on *Nidranasha* (Insomnia or Disturbed Sleep)

According to *Ayurveda*, state of wellness as well as sickness, nourishment and emaciation, strength and weakness, fertility and infertility, knowledge and ignorance, life and death, these all are under the control of *Nidra* (sleep).^[2] The importance of sleep is self-explanatory from this statement.

Generally a 16 hours duration sleep is required for infants and 10 hours for adolescents. For the middle aged individuals, 8 hour sleep is advised whereas 5 hour duration of sleep is advised for the old aged group.^[3] Alteration of sleep from the normal range doesn't produce ill effects immediately. In connection with occasional journeys, celebrations, etc. a person may be deprived of the sleep. If the duration of the sleep gets reduced, or is lost significantly for a long term, then it can be included under *Nidranasha*.

Mechanism of sleep

Sleep occurs due to the activity of sleep inducing centres in brain. Damage of these sleep centres result in sleeplessness or persistent wakefulness called insomnia.^[4] *Nidra* has got its origin since the beginning of this universe and is caused and characterized by *Tamoguna*. As *Tamas* is more prevalent during night, sleep occurs naturally during night.^[5] When *Srotases* (circulatory channels) are filled with *Kapha Dosha* and also due to fatigue, *Indriyas* (sense

organs) will withdraw from their respective functions. This leads to the manifestation of sleep in individuals.^[6]

Causes of *Nidranasha* (insomnia or disturbed sleep)

Motor Vehicle operators, air craft pilots, loco pilots, various signal operators, IT Professionals, hospital Staff (duty doctors, nurses, Interns, etc.), industry workers, labourers and all other jobs which carve night sleep include Police men, Politicians, etc. are mostly affected with *Nidranasha* (insomnia or disturbed sleep). Irrational use of modern gadgets, continuous watching of television especially during night hours, etc. are more significant causes for *Nidranasha* (insomnia or disturbed sleep) during present days.

Acharya Sushruta underscores the pathological sleep deficit owing to diminished *Kapha Dosha* and aggravated *Vata Dosha* in individuals. Adverse impacts on both body and mind are also enlisted as causes for sleeplessness.^[7] Further he highlights the aggravation of *Vata* and *Pitta Dosha*, mental disturbances, *Dhatukshaya* (depletion of tissues) and traumas as etiological factors of *Nidranasha* (insomnia or disturbed sleep).^[8] *Acharya Vagbhata* includes the 'sleep routine' as a factor which can influence the sleep of the individual.^[9] *Acharya Indu* clarifies that the routine practice of sleep according to the time is essential for the induction of sleep.^[10] After describing the management of *Atinidra* (protracted sleep), *Acharya Vagbhata* appeals the same measures as etiological factors for *Nidranasha* (insomnia or disturbed sleep). It includes the therapeutic procedures such as *Vamana* (Emesis therapy), *Virechana* (Purgation therapy), *Nasya* (Nasal instillation of medicated oils), *Raktamoksha* (Blood-letting therapy), *Dhoomapana* (Inhalation of medicated fumes), etc. Suppression of hunger and thirst, indulgence in regular sexual intercourse, physical ailments, etc. by an individual lead to *Nidranasha* (insomnia or disturbed sleep). Mental factors such as *Harsha* (excitement), *Shoka* (grief), *Bhaya* (fear) and *Krodha* (anger) also influences the sleep negatively.^[11]

Acharya Charaka adds *Ativyaayama* (strenuous physical activities/exercise) and *Asukha Shaiyaa* (discomfortable bed/mattress) in this context. He also highlights the predominance of *Satva* and loss of *Tamas* leading to reduced sleep.^[12] Among *Triguna*, *Satva* is responsible for consciousness, *Rajas* for activity and *Tamas* for inertness. In balanced state, they bring about health. Predominance of *Satva* and loss of *Tamas* lead to the increased consciousness or alertness and reduced inertness respectively. This results in *Nidranasha* (insomnia or disturbed sleep).

Ill effects of *Nidranasha* (insomnia or disturbed sleep)

According to *Acharya Vagbhata* *Nidranasha* (insomnia or disturbed sleep) leads to the manifestation of *Angamardda* (body pain), *Shirogourava* (heaviness of head), *Jrumbha* (yawning), *Jaadya* (weakness), *Glaani* (fatigue), *Bhrama* (fainting), *Apakti* (indigestion), *Tandra* (stupor) and different *Vata Vyadhi* (diseases due to aggravated *Vata Dosha*).^[13]

Management of *Nidranasha* (insomnia or disturbed sleep)

Management of *Nidranasha* (insomnia or disturbed sleep) should aim upon pacification of increased *Vata* and *Pitta Dosha* and uplifting diminished *Kapha Dosha*. For the purpose of understanding, management of *Nidranasha* (insomnia or disturbed sleep) can be divided into internal and external measures. Internal measures include *Aahaara* (diet modification) and internal medicines advised in *Nidranasha* (insomnia or disturbed sleep). Different therapeutic procedures and regimens advised in *Nidranasha* (insomnia or disturbed sleep) constitute the external measures.

Internal Measures

Acharya Sushruta advises to include *Shaali* (rice), *Godhooma* (wheat), *Pishtanna* (pastries made up of rice flour), *Ikshurasa* (sugarcane juice) and its various preparations, *Ksheera* (milk), *Mamsa Rasa* (meat soup) especially made out of *Bileshaya* (animals who live in burrows) and *Vishkira* (gallinaceous birds; eg: Rooster) *Mamsa*. *Aahaara* should be predominant of *Madhura Rasa* and *Snigdha Guna*. It is specially advised to make use of *Draaksha* (grapes), *Sita* (sugar), *Ikshu Dravya* (sugarcane and its different preparations) during the night.^[14]

Acharya Vagbhata adds various preparations out of *Guda* (jaggery) and advises the consumption of *Mamsa Rasa* (meat soup) prepared out of *Aanoopa* (animals inhabiting in marshy land) and *Audaka* (aquatic animal; eg: Fish) *Mamsa*. Use of *Maasha* (black gram), *Kilaata* (paneer) and *Mahisha Dadhi* (curd prepared out of buffalo's milk) is also advised to combat *Nidranasha* (insomnia or disturbed sleep). *Ghruta* prepared with *Jeevaneeya Gana* (a group of ten drugs which increase vitality) is advised to be consumed, followed by milk as *Anupaana* (a supplement drink). It is advised to consume *Madya* (alcohol) brewed out of *Shaali* (rice).^[15] This particular alcoholic preparation will be helpful to attain the state of intoxication according to *Acharya Indu*.^[16] *Sura Madya* is the one which is prepared out of fermentation of rice flour.^[17]

External Measures

Acharya Sushruta advises *Abhyanga* (oil massage), *Moordha Taila* (Oil application over head), *Udwarttana* (powder massage) and *Samvaahana* (caressing massage).^[18] *Acharya Vagbhata* adds *Karnapoorana* (filling oil inside ear), *Netratarpana* (retaining of unctuous substance over eyes), *Shirolepa* (anointment over head), *Mukhalepa* (facial anointment), etc.^[19] *Acharya Charaka* adds *Snaana* (bath) along with these.^[20]

Sleep etiquette and psychological factors which promote sleep

Acharya Vagbhata instructs to sleep over a comfortable bed in a fragrant room with optimum air flow. The touch or presence of the beloved people or caressing massage will be helpful in promoting the sound sleep. A hug by the beloved, contentment, fulfilment of duties or tasks, objects pleasing to the mind are said to be best for promotion of the sleep.^[21] *Acharya Charaka* adds the utility of pleasing sound for the induction and promotion of sleep. He also advises to maintain the sleep routine.^[22] Induction of sleep occurs uninterrupted in an individual who practices *Brahmacharya* (celibacy) and who got detached from *Maithuna Sukha* (sexual pleasure). Mental satisfaction is having crucial role for the arousal of timely sleep.^[23]

Day sleep as a compensatory measure

The person who got accustomed to either day sleep or night sleep won't be affected by diseases arising out of sleep deprivation.^[24] According to *Ayurveda* a person who remained awake during the night ; it can be compensated by sleeping in the morning hours for half the time that he/ she had been awoken during night.^[25]

DISCUSSION

The duration of sleep varies according to the different stages of the life. There are so many influencing factors which determine the duration of the sleep. Diurnal variations, seasons, geographical land (*Desha*), constitution of the individual (*Prakriti*), health, etc. are such influencing factors. During summer season, the day is lengthy and night is short and this will be tapering the duration of normal sleep in the night. This phenomenon is more prevalent in North western part of Indian subcontinent. Due to the predominance of *Vata Dosha* and predominant dryness, sleep is to be practiced more in *Jaangala Desha* (desert or dry land) compared to *Aanoopa Desha* (marshy land). Being influenced by the dominant *Dosha* which determines *Prakriti* (constitution of the individual), *Kapha* type tends to sleep more

compared to *Pitta* and *Vata* types. Sleep disturbances are more seen in *Vata* individuals and they are advised to sleep more compared to *Pitta* and *Kapha* individuals.

Over administration of different *Shodhana* therapies is one among the cause for *Nidranasha* (insomnia or disturbed sleep). It can be inferred that the irrational or excessive administration of these procedures lead to *Dhatu Kshaya* (depletion of tissues) which in turn causes aggravation of *Vata Dosha*. This contributes *Nidranasha* (insomnia or disturbed sleep). Sleep routine is having its own importance for the induction of sleep. This forms a habit in individuals and the deviation from the same may lead to sleep disturbances. A mentally excited person finds difficult to sleep. His mind will be haunted with the cause and forthcoming course of excitement. Thus he cannot sleep properly. Grief, fear, anger, etc. mental factors lead to aggravation of both *Vata* and *Pitta* Dosha which are contributing to *Nidranasha* (insomnia or disturbed sleep).

Millions of workers regularly work at night all over the world either on a permanent or rotating schedule. Sleep deprivation is common among them even though status of the profession varies. In addition each million more elect to remain awake at night to meet deadlines, drive long distance, etc. This results in the sleep loss and misalignment of circadian rhythm with respect to sleep wake cycle. Studies of regular night-shift workers indicate that the circadian timing system usually fails to adapt successfully to such inverted schedules. Sleep deprivation increases length of time awake prior to work and misalignment of circadian phase produce decrease alertness and performance, increase reaction time, an increased risk of performance lapses, there by resulting in greater safety hazards among night workers. Sleep disturbances nearly double the risk of a fatal work accident. Additional problems include higher rates of cancer and of cardiac, gastro intestinal and reproductive disorders in chronic night shift workers.^[26]

Analysis of *Dravya* (substances) advised in *Nidranasha* (insomnia or disturbed sleep)

SL.NO.	<i>Dravya</i>	<i>Rasa</i> (Taste)	<i>Guna</i> (Properties)	<i>Veerya</i> (Potency)	<i>Vipaka</i> (Post digestive taste)	Significant <i>Karma</i> (Action)
1.	<i>Shaali</i> (Rice)	<i>Madhura</i>	<i>Snigdha, Laghu</i>	<i>Sheeta</i>	<i>Madhura</i>	<i>Pathya</i> (healthy)
2.	<i>Godhooma</i> (Wheat)	<i>Madhura</i>	<i>Snigdha, Guru</i>	<i>Sheeta</i>	<i>Madhura</i>	Reduces <i>Vata</i> and <i>Pitta</i>
3.	<i>Ikshu Rasa</i>	<i>Madhura</i>	<i>Snigdha, Guru</i>	<i>Sheeta</i>	<i>Madhura</i>	Reduces <i>Vata</i> and <i>Pitta</i>
4.	<i>Ksheera</i> (Milk)	<i>Madhura</i>	<i>Snigdha, Guru</i>	<i>Sheeta</i>	<i>Madhura</i>	Reduces <i>Vata</i> and <i>Pitta</i>
5.	<i>Dadhi</i> (Curd)	<i>Amla</i>	<i>Snigdha, Guru</i>	<i>Ushna</i>	<i>Amla</i>	Reduces <i>Vata</i>
6.	<i>Mamsa Rasa</i> (Meat soup)					<i>Brimhana</i>
7.	<i>Audaka</i> and <i>Bileshaya</i> <i>Mamsa</i>					Reduces <i>Vata</i> and increases <i>Kapha</i>
8.	<i>Vishkira Mamsa</i>					Reduces <i>Vata</i> and <i>Pitta</i>
9.	<i>Draksha</i> (Grapes)	<i>Madhura</i>	<i>Snigdha, Guru</i>	<i>Sheeta</i>	<i>Madhura</i>	Reduces <i>Vata</i>
10.	<i>Sita</i> (Sugar)	<i>Madhura</i>	<i>Snigdha, Guru</i>	<i>Sheeta</i>	<i>Madhura</i>	Reduces <i>Vata</i> and <i>Pitta</i>
11.	<i>Masha</i> (Black gram)	<i>Madhura</i>	<i>Snigdha, Guru</i>	<i>Ushna</i>	<i>Madhura</i>	Reduces <i>Vata</i>
12.	<i>Kilaata</i> (Paneer)					Promotes <i>Nidra</i>
13.	<i>Sura Madya</i>		<i>Snigdha, Guru</i>			Reduces <i>Vata</i> and increases <i>Kapha</i>

Majority of the above tabulated food articles have *Madhura* (sweet) *Rasa* (taste), *Snigdha* (unctuous) and *Guru* (heavy) properties, *Sheeta* (cold) *Veerya* (potency) and *Madhura* (sweet) *Vipaka* (post digestive taste). They are having the significant action of pacifying either *Vata* or *Pitta* or both. *Dadhi* (curd) is an exception which is having *Amla* (sour) taste and *Amla* (sour) *Vipaka* (post digestive taste). *Dadhi* (curd) along with *Masha* (blackgram) are hot in potency. Along with *Snigdha* (unctuous) and *Guru* (heavy) *Guna* (properties) both *Dadhi* (curd) and *Masha* (blackgram) cure *Vata*. Buffalo's milk and curd prepare out of same will be helpful in curing *Nidranasha* (insomnia or disturbed sleep) because this particular milk is praised for promotion of sleep. A cup of lukewarm milk added with sugar or sugar candy is advisable for a person who is suffering from *Nidranasha* (insomnia or disturbed sleep). *Ayurveda* suggests the judicious consumption of alcohol for those who are suffering from *Nidranasha* (insomnia or disturbed sleep). Thus all *Dravya* (substances) advised for the management of *Nidranasha* are *Brimhana* (nutritive) and effectively cure both *Vata Dosha* and *Pitta Dosha*.

Abhyanga (oil massage) pacify *Vata Dosha* and it is best for promoting the sleep. If the patient feels difficulty in doing full body oil massage, he can practice other modes which

include *Moordha Taila* (Oil application over head), *Paadabhyanga* (foot massage with oil) and application of oil over ears. *Netratarpana* (retaining of unctuous substance over eyes) will be a good choice for those are suffering from sleep disturbances by prolonged exposure to computer screens or other gadgets. Drugs with cold potency can be used for *Shirolepa* (anointment over head). *Mukhalepa* (facial anointment) will be soothing to the face and it promotes sleep. Moreover it would be helpful in regaining the lustre and tone of face, which might be lost due to sleeplessness. *Snaana* (bath) eradicates the tiredness, provides enthusiasm and there by ensure proper sleep, which is devoid of physical and mental strain.

During summer season, it is advised to spend time in *Saudha Prushtta* (terrace) exposed to moonlight in night hours. This ensures the good ventilation as advised in *Nidranasha* (insomnia or disturbed sleep). In urban areas especially in thickly populated areas, use of air conditioners can be suggested during summer season. This will be helpful in uninterrupted sleep during the night hours. Fragrant atmospheres can be created using natural flowers or scents and it is having a good role in controlling Pitta. A comfortable and neat mattress is an essential part of sleep hygiene and it can influence our mind positively.

Caressing massage and hug especially by the beloved people will ease the stress and reassures a comfort zone which is a must need for people who are suffering from *Nidranasha* (insomnia or disturbed sleep). Similarly fulfilments of task, contentment, etc. relieve anxiety and worries. By avoiding non conducive sensory objects before sleep, a person can sleep well. Thus it is advised to avoid watching television, gazing at computer screens and other gadgets at least an hour before sleeping. Listening to conducive matters and melodious music before sleeping will be very much helpful in induction and promotion of the sleep. Maintenance of sleep routine is crucial and it builds up a habit. The subconscious mind is well trained with the habits and it daily induces the sleep according to this routine.

Abstinence of sex is advised for a sound sleep. It doesn't imply the complete avoidance of sex. This advice reiterates the fundamental objective of sex as procreation and warns the irrational sexual intercourse for mere pleasure. A person who finds uncontrollable desire for sex may give up a good part of healthy sleeping hours for sexual activities and there by suffer from sleep deprivation.

Practice of day sleep as a compensatory measure will be helpful for those who are suffering from shift work sleep disorders. They can practice day sleep strictly based on the norms

suggested by *Ayurveda*. The compensatory sleep should be done in fasting.^[27] Day sleep after intake of food even makes the healthy person into diseased condition.^[28] *Acharya* suggest that, if a person wishes to have day sleep, the duration should be one *Muhoortha*(45-50 mins approx).^[29] Duration of night sleep is considered as 2-3 *Yaama*(6-9 hrs).^[30] So the duration of compensatory day sleep can be determined as 3hrs-4.5 hrs.

CONCLUSION

One should never compromise the sleep for other activities. Sleep deprivation can produce ill effects pertaining to both body and mind. *Ayurveda* discusses a wide range of both internal and external measures for *Nidranasha* (insomnia or disturbed sleep). These measures are to be practiced as per the advice and thorough observation of a physician. Avoiding the irrational use of gadgets and cultivation of healthy sleep routine during the night can prevent the catastrophic outcome of sleeplessness.

LIST OF REFERENCES

1. L.C Gupta, Abhitabh Gupta, Abhishek Gupta, Differential Diagnosis, Jaypee Brothers Medical Publishers (P) Ltd. New Delhi, Edition seven, 946: 142.
2. Acharya Vagbhata, Ashtanga Hridaya with commentaries-Sarvangasundara of Arunadatta and *Ayurvedarasayana* of Hemadri; Annotated by: Dr. Anna Moreshwar Kunte and Krishna Ramachandra Shastri Navre; Edited by: Pt. Hari Sadasiva Sastri Paradakara Bhishagacharya; Chaukamba Surabharati Prakashan, Varanasi; Edition: Reprint, Year, 2010; 956, 140.
3. L.C Gupta, Abhitabh Gupta, Abhishek Gupta, Differential Diagnosis, Jaypee Brothers Medical Publishers (P) Ltd. New Delhi, Edition: seven, 946, 142.
4. K Sembulingam, Prema Sembulingam, Essentials of Medical Physiology, Jaypee Brothers Medical Publishers (P) Ltd. New Delhi, Edition: third, 872, 764.
5. Vriddha Vagbhata Ashtangasangraha with Sasilekha commentary by Indu; Chaukhambha Sanskrit series, Varanasi; Edition: Reprint, Year, 2005; 92.
6. Vriddha Vagbhata Ashtangasangraha with Sasilekha commentary by Indu; Chaukhambha Sanskrit series, Varanasi; Edition: Reprint, Year, 2005; 92.
7. Acharya Sushruta-SushrutaSamhita with Nibandhasangraha commentary of Sri Dalhanacharya and the Nayachandrika Panjika of Sri Gayadasacharya on Nidana Sthana edited by Vaidya Yadavji Trikamji Acharya from the beginning to the 9th Adhayaya of

- Chikitsa Sthana and rest by Narayan Ram Acharya 'Kavyatirtha', Published by Chaukamba Suarbharati Prakashan, Varanasi, UP, Reprint, 2008; 824, 358.
8. Acharya Sushruta-Sushruta Samhita with Nibandhasangraha commentary of Sri Dalhanacharya and the Nayachandrika Panjika of Sri Gayadasacharya on Nidana Sthana edited by Vaidya Yadavji Trikamji Acharya from the beginning to the 9th Adhayaya of Chikitsa Sthana and rest by Narayan Ram Acharya 'Kavyatirtha', Published by Chaukamba Suarbharati Prakashan, Varanasi, UP, Reprint, 2008; 824: 359.
 9. Vriddha Vagbhata Ashtangasangraha with Sasilekha commentary by Indu; Chaukhambha Sanskrit series, Varanasi; Edition: Reprint, Year 2005, Page Number:93.
 10. Vriddha Vagbhata Ashtangasangraha with Sasilekha commentary by Indu; Chaukhambha Sanskrit series, Varanasi; Edition: Reprint, Year, 2005; 93.
 11. Vriddha Vagbhata Ashtangasangraha with Sasilekha commentary by Indu; Chaukhambha Sanskrit series, Varanasi; Edition: Reprint, Year, 2005; 93.
 12. Acharya Agnivesa– Charaka Samhita, revised by Charaka and Dridhabala with *Ayurveda* Deepika Commentary of Chakrapanidatta, edited by Vaidya Yadavaji Trikamji Acharya, prologued by Prof.R.H.Singh, Choukamba Surabharathi Prakashan, reprint, 2011; 738, 119.
 13. Vriddha Vagbhata Ashtangasangraha with Sasilekha commentary by Indu; Chaukhambha Sanskrit series, Varanasi; Edition: Reprint, Year, 2005; 93.
 14. Acharya Sushruta-Sushruta Samhita with Nibandhasangraha commentary of Sri Dalhanacharya and the Nayachandrika Panjika of Sri Gayadasacharya on Nidana Sthana edited by Vaidya Yadavji Trikamji Acharya from the beginning to the 9th Adhayaya of Chikitsa Sthana and rest by Narayan Ram Acharya 'Kavyatirtha', Published by Chaukamba Suarbharati Prakashan, Varanasi, UP, Reprint, 2008; 824, 359.
 15. Vriddha Vagbhata Ashtangasangraha with Sasilekha commentary by Indu; Chaukhambha Sanskrit series, Varanasi; Edition: Reprint, Year, 2005; 93.
 16. Vriddha Vagbhata Ashtangasangraha with Sasilekha commentary by Indu; Chaukhambha Sanskrit series, Varanasi; Edition: Reprint, Year, 2005; 93.
 17. Acharya Vagbhata, Ashtanga Hridaya with commentaries-Sarvangasundara of Arunadatta and *Ayurveda* rasayana of Hemadri; Annotated by: Dr. Anna Moreshwar Kunte and Krishna Ramachandra Shastri Navre; Edited by: Pt. Hari Sadasiva Sastri Paradakara Bhishagacharya, Chaukamba Subharati Prakashan, Varanasi; Edition: Reprint, Year, 2010; 956, 80.

18. Acharya Sushruta-SushrutaSamhita with Nibandhasangraha commentary of Sri Dalhanacharya and the NayachandrikaPanjika of Sri Gayadasacharya on NidanaSthana edited by VaidyaYadavjiTrikamjiAcharya from the beginning to the 9thAdhayaya of ChikitsaSthana and rest by Narayan Ram Acharya 'Kavyatirtha', Published by ChaukambaSuarbharatiPrakashan, Varanasi, UP, Reprint, 2008; 824: 359.
19. Vriddha Vagbhata Ashtangasangraha with Sasilekha commentary by Indu; Chaukhambha Sanskrit series, Varanasi; Edition: Reprint, Year, 2005; 93.
20. Acharya Agnivesa– CharakaSamhita, revised by Charaka and Dridhabala with *Ayurveda* Deepika Commentary of Chakrapanidatta, edited by Vaidya YadavajiTrikamji Acharya, prologued by Prof.R.H.Singh, ChoukambaSurabharathiPrakashan, reprint, 2011; 738: 119.
21. Vriddha Vagbhata Ashtangasangraha with Sasilekha commentary by Indu; Chaukhambha Sanskrit series, Varanasi; Edition: Reprint, Year, 2005; 93.
22. Acharya Agnivesa– CharakaSamhita, revised by Charaka and Dridhabala with *Ayurveda* Deepika Commentary of Chakrapanidatta, edited by Vaidya YadavajiTrikamji Acharya, prologued by Prof.R.H.Singh, ChoukambaSurabharathiPrakashan, reprint, 2011; 738: 119.
23. Acharya Vagbhata, AshtangaHridaya with commentaries-Sarvangasundara of Arunadatta and *Ayurvedarasayana* of Hemadri; Annotated by: Dr. Anna Moreshwar Kunte and Krishna Ramachandra ShastriNavre; Edited by: Pt. Hari Sadasiva Sastri Paradakara Bhishagacharya;, Chaukamba Subharati Prakashan, Varanasi; Edition: Reprint, Year, 2010; 956: 143.
24. Acharya Sushruta-SushrutaSamhita with Nibandhasangraha commentary of Sri Dalhanacharya and the Nayachandrika Panjika of Sri Gayadasacharya on NidanaSthana edited by Vaidya Yadavji Trikamji Acharya from the beginning to the 9thAdhayaya of Chikitsa Sthana and rest by Narayan Ram Acharya 'Kavyatirtha', Published by Chaukamba Suarbharati Prakashan, Varanasi, UP, Reprint, 2008; 824: 359.
25. Acharya Vagbhata, AshtangaHridaya with commentaries-Sarvangasundara of Arunadatta and *Ayurvedarasayana* of Hemadri; Annotated by: Dr. Anna Moreshwar Kunte and Krishna Ramachandra Shastri Navre; Edited by: Pt. Hari Sadasiva Sastri Paradakara Bhishagacharya;, Chaukamba Subharati Prakashan, Varanasi; Edition: Reprint, Year, 2010; 956, 143.
26. Harrison's Principles of Internal Medicine; Mc Graw-Hill companies; Edition, 17; 179.

27. Acharya Vagbhata, Ashtanga Hridaya with commentaries-Sarvangasundara of Arunadatta and *Ayurvedarasayana* of Hemadri; Annotated by: Dr. Anna Moreshwar Kunte and Krishna Ramachandra Shastri Navre; Edited by: Pt. Hari Sadasiva Sastri Paradakara Bhishagacharya;, Chaukamba Subharati Prakashan, Varanasi; Edition: Reprint, Year, 2010; 956: 143.
28. Acharya Vagbhata, Ashtanga Hridaya with commentaries-Sarvangasundara of Arunadatta and *Ayurvedarasayana* of Hemadri; Annotated by: Dr. Anna Moreshwar Kunte and Krishna Ramachandra Shastri Navre; Edited by: Pt. Hari Sadasiva Sastri Paradakara Bhishagacharya;, Chaukamba Subharati Prakashan, Varanasi; Edition: Reprint, Year, 2010; 956: 143.
29. Acharya Vagbhata, Ashtanga Hridaya with commentaries-Sarvangasundara of Arunadatta and *Ayurvedarasayana* of Hemadri; Annotated by: Dr. Anna Moreshwar Kunte and Krishna Ramachandra Shastr iNavre; Edited by: Pt. Hari Sadasiva Sastri Paradakara Bhishagacharya;, Chaukamba Subharati Prakashan, Varanasi; Edition: Reprint, Year, 2010; 956, 143.
30. Acharya Vagbhata, Ashtanga Hridaya with commentaries-Sarvangasundara of Arunadatta and *Ayurvedarasayana* of Hemadri; Annotated by: Dr. Anna Moreshwar Kunte and Krishna Ramachandra Shastri Navre; Edited by: Pt. Hari Sadasiva Sastri Paradakara Bhishagacharya;, Chaukamba Subharati Prakashan, Varanasi; Edition: Reprint, Year, 2010; 956, 143.