

ROLE OF AYURVEDA IN OCCUPATIONAL HEALTH WITH SPECIAL REFERENCE TO SLEEP RELATED DISORDERS

¹*Dr. Vidyanand Mohan and ²Dr. Aparna Nandakumar

¹Assistant Professor, Dept of Samhita and Siddhanta, A.L.N. Rao Memorial Ayurvedic Medical College, Koppa, Karnataka.

²2nd Year P.G Scholar, Dept of Rasashastra and Bhaishajya Kalpana, SDM College of Ayurveda, Udipi, Karnataka.

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*Corresponding Author

Dr. Vidyanand Mohan

Assistant Professor, Dept. of
Samhita and Siddhanta,
A.L.N. Rao Memorial
Ayurvedic Medical College,
Koppa, Karnataka.

ABSTRACT

Ayurveda consider *Nidra* (sleep) as one among the three sub pillars of life which helps in the maintenance of the body, along with *Aahara* (food) and *Brahmacharya/Abrahmacharya* (sexual life). All *Acharyas* are having the similar opinion that various aspects of happiness and sorrow, nourishment and emaciation, strength and weakness, virility and eunuchism, knowledge and ignorance, life and death are all dependent upon sleep.^[1] *Ayurveda* discusses in vast regarding the ill effects arising out of sleep deprivation and various measures to bring back the body from the ill effects of sleep deprivation. According to WHO, occupational health deals with all aspects of health and safety in the work place and has a strong focus on primary prevention of

hazards.^[2] From technologically and financially sound workers to lower class labour, most of the workers are suffering from disease due to lack of proper sleep. Sleep related problems related with altered job patterns are discussed under 'Shift work sleep disorders'. So it's the need of hour to utilize Ayurvedic knowledge to cure disorders arising out of sleep deprivation related with occupation.

KEYWORDS: *Nidranasha*, Shift work sleep disorders, Insomnia, Fatigue.

INTRODUCTION

Sleep is a naturally recurring state of mind characterized by altered consciousness, relatively inhibited sensory activity, inhibition of nearly all voluntary muscles and reduced interactions with surroundings. Sleep is very essential for the maintenance of life. Deprivation of sleep

leads to many ailments which affect both mind and body. Many people are suffering in the world due to lack of proper sleep. Among the many causes for lack of proper sleep, 'Shift Works' also contribute its own share. Man is in his constant move to improve his living with better finance, technologies, relationships, etc. Meanwhile he forgets how to preserve his health. For the sake of better life, he is ready to work hard even avoiding his natural needs. The tendency to avoid proper sleep in the night is significant among them. As part of the job pattern, the middle class workers and labourers are also forced to work throughout night. The various ill effects of sleep deprivation they come across by this altered job pattern can be discussed under 'Shift work sleep disorders'.

SHIFT WORK SLEEP DISORDERS^[3]

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.

Affected People

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.

ILL Effects

Attempts to override powerful biological drive for sleep by sheer force of will can yield a catastrophic outcome when sleep processes intrude involuntarily upon waking brain. Sleep related attention failures typically last only seconds but are known on occasion to persist for longer durations. These frequent brief intrusions of stage 1 sleep into behavioural wakefulness are a major component of the impaired psychomotor performance seen with

sleepiness. There is a significant increase in the risk of sleep related, fatal to-the-driver highway crashes in the early morning and late afternoon hours, coincident with bimodal peaks in daily rhythm of sleep tendency.^[4]

Medical staff including (Doctors/Interns/Nurses) working at night significantly increases the risk of serious medical errors in ICU's. Researches show, work shifts of 30 consecutive hours double the risk of attention failures among I.C.U. Moreover working for greater than 24 hrs consecutively increases the risk of needle stick injuries. Some 20% of hospital interns report making a fatigue related mistake that injured a patient and 5% admit making a mistake that results in the death of a patient.^[5]

Ayurvedic Persective on Shift Work Sleep Disorders

Shift work sleep disorders can be discussed under diseases due to *Nidra Vegarodha* (suppression of sleep), *Nidra Naasha* (insomnia) and *Akaala Shayana* (untimely sleep). As the natural urge for sleep in the night is being suppressed in relation with shift works, *Nidra Vegarodha Janya Vikaraas* (diseases due to suppression of sleep) are having significant role. When a person loses his natural sleep in the night, he may have to indulge in the day sleep or to any other untimely sleep. Suppression of sleep for a longer period leads to insomnia. Various spectrums of clinical manifestations of insomnia are discussed under diseases due to *Nidranaasha*. According to *Ayurveda*, all modes of sleep apart from proper night sleep are considered pathological. *Acharyas* have clearly mentioned the norms for day sleep as a substitute to night sleep. Until these norms are not satisfied, simple day sleep is not leading to positive health, at the same time leading to various other diseases which are listed under *Akaala Shayana* (untimely sleep).

Table 1: Diseases due to *Nidra Vegarodha* (suppression of sleep).

Clinical Features	<i>Ashtanga Hridaya</i> ^[6]	<i>Charaka</i> ^[7]	<i>Sushruta</i> ^[8]
<i>MOHA</i> (fainting)	+	-	-
<i>TANDRA</i> stupor)	-	+	+
<i>SHIRO GOURAVA</i> (heaviness to head)	+	+	+
<i>AKSHI GOURAVA</i> (heaviness to eyes)	+	+	+
<i>AALASYA</i> (laziness)	+	-	-
<i>JRIMBHA</i> (yawning)	+	+	+
<i>ANGAMARDHA</i> (Body ache)	+	+	+

Diseases due to *Nidranaasha* (Insomnia)

According to *Acharya Vagbhata* (A.H.Su.7/64) *Nidranaasha* leads to *Angamardha* (body ache), *Shiro Gourava* (heaviness to head), *Jrimbha* (yawning), *Jaadya* (weakness), *Glaani* (fatigue), *Bhrama* (fainting), *Tandra* (stupor), *Apakti* (indigestion) and various *Vata Rogas* (ailments due to vitiated Vata Dosha).

Table 2: Diseases due to *Akaala Shayana* (Untimely sleep).

Clinical features	<i>Ashtanga Hridaya</i> ^[9]	<i>Ashtanga Samgraha</i> ^[10]	<i>Charaka Samhita</i> ^[11]
<i>GALAROGA</i> (throat disorders)	-	+	+
<i>GURUGATRATA</i> (heaviness to the body)	-	+	+
<i>ARDHAVABHEDAKA</i> (hemicrania)	-	+	+
<i>JWARA</i> (fever)	+	+	+
<i>PEENASA</i> (rhinitis)	+	+	+
<i>SHOPHA</i> (edema)	+	+	+
<i>HRILLASA</i> (nausea)	+	+	+
<i>SROTORODHA</i> (obstruction of circulatory channels of the body)	+	+	+
<i>AGNIMAANDYA</i> (loss of digestive power)	+	+	+
<i>AROCHAKA</i> (anorexia)	-	+	+
<i>SMRITI/BUDDHI PRAMOHA</i> (impaired memory/intelligence)	-	-	+
<i>INDRIYA ASAMARTHYA</i> weakness of sensory or motor organs	-	-	+

DISCUSSION**Remedies For Shift Work Sleep Disorders^[12]**

Safety programs should promote education about sleep and increase awareness of the hazards associated with night work. The goal should be to minimize both sleep deprivation and circadian disruption. Work schedules should be designed to minimize

- Exposure to night work.
- Frequencies of shift rotation so that shifts don't rotate more than once every 2-3 weeks.
- The no. of consecutive night shifts
- The duration of night shifts.

Shift duration of greater than 16 hours should be universally recognized as increasing the risk of sleep related errors and performance lapses to a level that is unacceptable in non emergency circumstances.

Ayurvedic Measures for Shift Work Sleep Disorders

Sleep is vital for all organisms. Its improper practice may even fatal. *Acharya Vagbhata* says Sleep which is untimely, excessive or very less destroys the happiness and longevity of life similar to the all destructive night at the end of the world. Suppression of any natural urges (Vegas) is *Pranajaparadha* (intellectual errors).

Broadly Ayurvedic measures for shift work can be divided into treatment as such for ailments arising out of it and secondly by making the person accustomed to day sleep as a compensatory (*Satmyeekarana*) with proper guide lines as told in Ayurvedic classics.

1. Treatment as such for Shift work sleep disorders

It is evident that, in shift work disorders suppression of natural urge of sleep occurs. In diseases which are arising out of *Nidra Vegadharana* (suppression of sleep), sleep itself and *Samvahaana* is told as remedy.^[13] *Samvaahana* is *Sukha Sparsha Mardanam*^[14], ie caressing massage. But the person still continues the *Nidra Vegadharana* (suppression of sleep) as part of his job pattern the treatment is going to futile.

Treatment can be employed in the form of *Aahara* (Dietetics), *Vihaara* (activities/habits) and *Oushadha* (medicaments). In *Brihatrayees* one can find out good description of measures for *Nidranaasha*.

Aahara Dravyas which are beneficial in *Nidranaasha* (insomnia) include, *Ksheera* (milk), *Dadhi* (curd), *Shalyanna* (red rice meal), *Godhooma* (wheat), *Pishtaanna* (pastries), *Mamsarasa* (meat soup), *Madya* (wines), *Ikshu vikaaras* (sugar cane and its various preparations), use of *Draaksha* (grapes), *Sita* (sugar) and *Ikshu* (sugar cane) at night, *Madhura-Snigdha* (sweet and unctuous) predominant food stuffs, etc.^[15]

Vihaaras include *Kaantabahulatahlesha* (warm embrace of the beloved), *Brahmacharya* (celibacy), *Graamyasukha Nispriha cheta* (mind free from sexual desires), *Santosh Triphata* (state of contentment), *Mana Anukoola Vishaya* (conducive matters to mind), *Svasteerna Shayana* (maintenance of proper sleep hygiene) etc.^[16]

Therapeutic measures include *Abhyanga* (oil massage), *Udhwartana* (vigorous stroke), *Samvaahana* (caressing massage), *Snaana* (bath), *Moordha Tailam* (applying oil over head), *Karna Pooranam* (filling oil inside ear), *Akshi Tarpanam* (filling medicated oil or ghee inside

eyes), *Shirolepa* (applying medicinal paste over head/scalp), *Mukhalepa* (applying medicinal paste over face) etc.^[17]

2. *Satmyeekarana of Nidra* (Compensatory measures)

It is a palliable measure to compensate lost night sleep with aid of day sleep. According to *Ayurveda* a person who remained awake during the night can be compensated by sleeping in the morning hours for half the time that had been awoken during night.^[18] But the compensatory sleep should be done without taking food.^[19] Day sleep after intake of food even makes the healthy person into diseased condition.^[20] *Acharyas* suggest that, if a person takes day sleep as such, the duration should be one *Muhoortha* (45-50 mins approx).^[21] Duration of night sleep is considered as 2-3 *Yaama* (6-9 hrs).^[22] So the duration of compensatory day sleep can be determined as 3hrs-4.5 hrs. The person who got accustomed to either day sleep or night sleep won't be affected by diseases arising out of sleep deprivation.^[23]

CONCLUSION

Considering various *Acharyas'* opinions, it can be understood that proper sleep at night (*Kaala Swabhavaja/ Rathri Swabhavaja Nidra*) is ideal for health. Proper sleep aids both physical & mental wellness along with strength, complexion, libido and such person will be neither too stout, nor emaciated and will be living for 100 years.^[24] In present era, shift work plays the role of villain and carves harmonious health. It's the need of hour to utilize essential remedies for 'Shift work sleep disorders' with aid of *Ayurveda*.

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