



A CRITICAL REVIEW OF SLEEP IN AYURVEDA

¹Alok Kumar Asthana and ^{*2}Gayatri Sharma

¹Associate Professor, PG Dept of Kriya Sharir, Ch. Brahm Prakash Ayurveda Charak Sansthan, New Delhi, India

²PG Scholar, PG Dept of Kriya Sharir, Ch. Brahm Prakash Ayurveda Charak Sansthan, New Delhi, India

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ABSTRACT

The Nidra is one among the three tripods of life in Ayurveda, the other two being the Aahar and Brahmacharya. These pillars are accountable for sound health of a person. Nidraayatsamsukhamdukham –denotes that pleasure and sorrows are determined bynidra. Physical health and functions of nervous system are maintained even during sleep. Development of body and mind of children and teenagers is also supervised by nidra. The timing and quality of nidra has been reduced due to unstable life style nowadays. Issues like pressure-oriented job, unhealthy diet and physical inactivity are adversely affecting our health, which eventually is reducing our calm sleep, resulting in insufficient relaxation of our body and mind. These factors are ultimately leading to depression, anxiety, insomnia, and git disturbances. So, it is the need of hour to know about benefits of good sleep to avoid diseases.

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INTRODUCTION

Above mentioned quote from Rigveda states that god does not have any sleep pattern, because they lack *Tamoguna*. This relates to the relationship between sleep and *Tamoguna*. Person with *Tamoguna* comparatively spend more time in sleep than that of *Satvaguna*. *Nidra* is liable for relaxation of exhausted mind, body and senses. A person sleeps when mind, sensory and motor organs get dissociated from their objects after being exhausted. According to Sushruta, a person sleeps when his *Hridaya*, which is its seat of consciousness, gets dominated by *tama*. Sleep¹ is defined as a state of unconsciousness from which the person can be aroused by sensory or other stimuli. Conversely, a person cannot be aroused in coma. The various stages of sleep vary from very light sleep to very deep sleep. Sleep researchers categorize them broadly in following two types.

Types of Sleep

The following two types of sleep appear alternately every night-

- Slow-wave sleep - the brain waves are very strong and have a very low frequency.
- Rapid eye movement sleep (REM sleep) – during this phase, the eyes undergo rapid movements, even though the person is still asleep.

Cause of Sleep

A sleep with its features similar to a natural sleep can be produced by stimulation of serotonin on several specific areas of the brain

- One of the stimulation areas for causing almost natural sleep is the raphe nuclei situated in the lower half of the pons and in the medulla. These nuclei are a thin sheet of special neurons located in the midline. Nerve fibers emerging from these nuclei spread locally in the brain stem reticular formation and also upward into the thalamus, hypothalamus, most areas of the limbic system, and the neocortex of the cerebrum. These nerve fibers also extend downward into the spinal cord, terminating in the posterior horns. At this place, they inhibit the incoming signals, such as pain. The nerve endings of nerve fibers from these raphe neurons secrete serotonin. An animal is unable to sleep when administered with a drug that blocks serotonin, which

*Corresponding author: Gayatri Sharma

PG Scholar, PG Dept of Kriya Sharir, Ch. Brahm Prakash Ayurveda Charak Sansthan, New Delhi, India

determines the action of serotonin as a neurotransmitter substance responsible for producing sleep.

- Nucleus of tractus solitarius is the termination in the medulla and pons for visceral sensory signals entering by way of the vagus and glossopharyngeal nerves. The stimulation of some of the areas of this nucleus is also found to produce sleep.
- Stimulation of following regions of diencephalon is known to cause sleep- (1) the rostral part of the hypothalamus, mainly in the suprachiasmatic area, and (2) an occasional area in the diffuse nuclei of the thalamus.

Sleep and Dosha

Since every person is different from the other in one way or the other, therefore their sleeping patterns too have a bit variation from each other.

Vata- These sleeps are of short duration and therefore a *vata* dominant individual just requires 6-7 hours of sleep to refresh. Although, these sleeps are irregular and light, due to which, these persons can wake up easily and face a difficulty in falling asleep again. Common features during sleep include teeth grinding, sleepwalking, sleep talking and airy dreams.

Pitta- These sleeps are sound and moderate and therefore a *pitta* dominant person requires 7-8 hours of sleep. Once wake up, falling back asleep is easy, unless the mind is overactive and stimulated. Usually the dreams are wild, fiery, and vivid.

Kapha- These sleeps are deep and stubborn and a *kapha* dominant individual requires at least 8-9 hours of sleep from which they cannot be easily woken. They may usually oversleep.

Physiology of Nidra

According to *Acharya Charaka*, when the *mana* (and the soul), including the *gyanendriya* and *karmendriya* gets exhausted, then they get dissociated from their objects and the person sleeps.ⁱⁱ

Acharya Susruta said about the physiology of *nidra* that a person sleeps when his *Hridaya*, which is a seat of consciousness, gets dominated by *tama*. The cause of waking is *satva*, but overall, nature itself is more dominant cause.ⁱⁱⁱ

Acharya Charaka also quotes that when *kapha* covers the *srotas* of the body, then the body gets exerted. Also the functioning of sense organs gets affected resulting in the manifestation of body by *nidra*.^{iv}

Importance of Nidra

The areas where sleep shows its physiological effects can broadly be divided in two classes^v – (1) Nervous system (2) Other functional systems.

The nervous system effects seem to be by far more important because any person who has a transected spinal cord in the neck (and therefore has no sleep wakefulness cycle below the transection) shows no harmful effects in the body beneath the level of transection that can be attributed directly to a sleep

wakefulness cycle. Lack of sleep certainly does, however, affect the functions of the central nervous system. Prolonged wakefulness is often associated with progressive malfunction of the thought processes and sometimes even causes abnormal behavioural activities. We are all familiar with the increased sluggishness of thought that occurs toward the end of a prolonged wakeful period, but in addition, a person can become irritable or even psychotic after forced wakefulness. Therefore, we can assume that sleep in multiple ways restores both normal levels of brain activity and normal balance among the different functions of the central nervous system. This might be likened to the “rezeroing” of electronic analogue computers after prolonged use, because computers of this type gradually lose their “baseline” of operation; it is reasonable to assume that the same effect occurs in the central nervous system because overuse of some brain areas during wakefulness could easily throw these areas out of balance with the remainder of the nervous system. We might postulate that the principal value of sleep is to restore natural balances among the neuronal centres. The specific physiologic functions of sleep remain a mystery, and they are the subject of much research.

- According to *Charaka, sukha, dukha, pusti, karshya, bala, abala, vrushata, klibata, gnyanam, agnyana* (ignorance), *jivana* and death are the features that may appear in body due to proper or improper *nidra*.^{vi}
- *Acharya Susruta* said that a person may live a disease free life by adopting proper and adequate *nidra*. He will have a peaceful mind equipped with strength, complexion and virility.^{vii}
- *Acharya Vagbhata* said that sensible observation of *nidra* leads happiness and longevity, just as the mind of the *yogies* become clear from knowledge of the soul and penance.^{viii}
- According to *Acharya Bhavamishra*, *nidra* is best for the alleviation of *pittadosh*.^{ix}
- According to *Bhavaprakasha*, *nidra* following meal mitigates *vata* and *pitta*, whereas increases *kapha*. It stouts the body and brings about comfort.^x
- *Acharya Kashyapa* accepts that comfortable *nidra* is mandatory for production of milk in mother.^{xi}

Nidra as an Adharaniya Vega-

- *Acharya Charaka* described 13 types of non-suppressible urges in seventh chapter of *sutrasthana* and considered *nidra* one among them, and further added that suppression of these urges may give rise to various types of diseases.^{xii}
- *Acharya Susruta* assumes that suppression of these non-suppressible urges mentioned by *Charaka* may lead to production of 13 types of *udavarta*.^{xiii}
- *Acharya Charaka* described 6 types of *udavarta* generated by the suppression of these urges but excludes *nidra* among those.^{xiv}

Types of Nidra

Acharya Charaka has classified *nidra* as following depending on causes^{xv}

1. *Tamobhava-* due to *tama*.

2. *Slesmasamudbhava*- due to vitiated *kapha*.
3. *Manah-sarirsrmasambhava*- caused by mental and physical exertion.
4. *Agantuki*-indicative of bad prognosis resulting in death.
5. *Vyadhi-anuvartini*- produced due to complications of other ailments like *Sannipatajwara* etc.
6. *Ratri-swabhavaprabhava*- produced due to the very nature of the night.

Acharya Dalhana distinguishes *nidra* in following three types on the basis of *Susruta Samhita* like

1. *Tamsi*-when *sangyavahasrotas* become filled with *slesma* dominated by *tamoguna*, then *tamsinidra* is produced.^{xvi}
2. *Swabhaviki*- This is natural form of *nidra* that is produced daily in all living beings.
3. *Vaikariki*-If some *vikar* generates in *mana* and body, then *nidra* does not occur. But if *nidra* is occurred then it is *vaikarikinidra*.

Acharya Vagbhat classifies *nidra* into seven types^{xvii}

- *Kalawabhawaj*- produces at accustomed time. i.e. nights
- *Amayaja*- generates due to effect of ailments.
- By fatigue of *mana*- due to exertion of *mana*
- By fatigue of *sharir*- due to exertion of *sharir*
- *Shleshmaprabhavaj*- due to dominance of *kaphadosha*
- *Agantuka*- due to external factors e.g. traumatic etc.
- *Tamobhava*- due to dominance of *tamoguna*

Abnormal Sleep

May be classified into

- Hypersomnia or excess of sleep (*atinidra*)
- Insomnia (*anidra*)

Hypersomnia or Excess of Sleep (*Atinidra*): Hypersomnia is a neurological disorder mainly represented by excessive sleepiness. According to our classical texts, it may give rise to obesity and diseases due to exaggerated *kaphadosha*, such as diabetes.

Treatment of Excessive Sleep

According to *Acharya Sushruta* as explained in *Sharirsthana*, following treatment may be administered in case of excessive sleep. The person can be treated by evacuative measures particularly emesis, lightening, blood-letting and mind-agitating.

Other treatments: 1) Fasting 2) Induction of sweating 3) Instillation of strong nasal drops or smelling of snuff 4) Application of strong eye ointment 5) Purgation.

Insomnia (*anidra*): The different views of insomnia regarding its causes are as follows-

Acharya Charaka

Elimination of *doshas* from the body and head through purgation and emesis, fear, anxiety, anger, smoke, physical exercise, bloodletting, fast, uncomfortable bed and predominance of *sattva* and suppression of *tamas* are the main

causes of insomnia. Other factors include overwork, old age, diseases, especially those due to vitiation of *vata* like colic pain etc.

Acharya Sushruta

Imbalance of *vata* and *pitta doshas* and mental stress act as a seed of insomnia.

Treatment of Insomnia (*Anidra*):

Promotion of a sound sleep may be achieved by many ways among which three play a key role. These are *Pranayama*, Meditation and Yoga.

Meditation: Meditation is fairly efficacious for all *doshas* and helps in setting equilibrium between mind, body, and soul and also maintains them in a calm and relaxed state. Though any form of meditation is effective, yet the most effortless is the breath awareness meditation in which one has to focus on his breath, inhale and exhale without letting his mind wander towards unnecessary thoughts. This process eventually leads to relaxation of body, mind and soul. The individual feels fresh and he experiences a sound sleep and ultimately a good health. To achieve the best results, meditation should be practised regularly, properly and at a fixed place. The most suitable time for meditation is in morning before sunrise, and in evening, after sunset. The person should avoid distractions during the period of meditation.

Yoga: The science of healthy and better living; physical, mental, moral, intellectual and spiritual is yoga. To achieve physical and mental fitness, one must adopt it in the daily routine because doing a little yoga each day makes a big difference. *Surya namaskara* is one of its example, whose daily practice promotes relaxation of mind, body, and soul.

DISCUSSION

A proper knowledge of physiology of sleep is crucial to plan the management of various disorders related to it. The features of Hypersomnias may be predominantly present in *kapha* dominant individuals; hence *kapha* alleviating treatment may be given to them. Similarly, the individual of *vata prakriti* seem to be more prone to develop features of insomnia; or individual suffering from insomnia may have exaggerated *vata dosha* in his body, therefore a *vata* alleviating *aaharvihar* may prove fruitful for him. On considering the changes in EEG at different stages of sleep, the slow wave sleep may be divided in four stages. The waves in first stage are broken by "sleep spindles". In later stages, the frequency of wave becomes slower progressively. Considering the features of *vata*, *pitta* and *kapha* discussed above, one may make a hypothesis, that *vata* dominant individual may have these waves of higher frequency, *pitta* with moderate frequency and *kapha* with minimum frequency but various appropriate research and experiments are required to prove it. The importance of *nidra* can be understood by the fact that it has been included in the three *upastambhas* of the body by *Acharya Charak*^{xviii}. These three pillars of life, if incorporated in our daily routine in a sensible manner, may increase the longevity of a disease-free life and decrease anxiety depression so as to improve the overall quality of life.

Conclusion

On the basis of above description, it can be concluded that in proper growth and development of body, *nidra* plays a key role, if administered in proper time in appropriate manner. Well being of a person's life rely on it. During the phase of a proper sleep and even succeeding to it, the mind and body are at complete rest. A person looking forward to seek good health must emphasize on the routine and timings of *nidra*.

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