



International Journal of Allied Medical Sciences and Clinical Research (IJAMSCR)

IJAMSCR |Volume 2 | Issue 4 | Oct-Dec- 2014
www.ijamscr.com

Review article

Ayurvedic research

Sleep is a complex programme in-built in the human body naturally

¹Amit Swarnakar, ²T.Borah, ³D. Baruah, ⁴B.K.Bharali

¹SRF (Ayurveda), ²RO (S-4) Ayu, ³RO (S-3) Ayu, ⁴AD (S-4) Incharge, North eastern India Ayurveda research Institute, Bletola, Guwahati, Assam, India

Corresponding author: Amit Swarnakar

Email address: dramit.swarnakar@gmail.com

INTRODUCTION

Today's Human world is a very complex world. Craving for sophistication is a very true phenomenon of the humans leading to pugnacious situation creating chaos in the human society. Humans are becoming more and more prone to mental hazards and thus creating hurdles in the physiological process of the human body. Aggressive approach, unrealistic thoughts, stress and strain, insomnia, mental hazards are some of the common complex complications are prevailing in the human society. These dark features are very complicated features, making the human world very dark and showing the path of misery and making them prone to dreaded kind of diseases and making the human society a disease society. Many sophisticated measures are coming out by the efforts of scientist around the world who are trying their level best to improve the living condition of the human being. It is seen that, these sophistications are some of the liable cause for the sufferings of the human being. Changes are necessary for the developmental process but unnatural changes are very chaotic and illogical because it creates hurdles in the long run of human life.

Sleep, one of the greatest gifts showered to the human society by the grace of god. Sleep brings peace and harmony in one's life. Sleep is a natural process or in the broad sense it can be said that, it is a programme

that is built in the human body. The human brain is like a battery and it needs seven hour sleep to get recharged. Ayurveda, the origin of Indian system of medicine has given priority for proper sleep. Ayurveda has regarded sleep as one of the sub-pillars of the human life. As the human society is changing day by day the longevity of the human world is also declining day by day and here it can be said that improper sleep can be regarded as one of the liable factor for changing the physiological de-arrangement of the human body. Due to the de-arrangement of the physiological process, several clinical characteristics are prevailing in the human society which is not a good feature for the human world. Ayurveda has given a very distinct thought in this regard and said that improper sleep can even lead to death of the person.

Literary approach

Ayurveda one of the ancient Indian System of medicine, is providing necessary curative measures for the sufferings of the people. The acharyas of Ayurveda with their tiring efforts could bring peace and harmony in one's life. Many necessary regimes are being coated in the literatures of Ayurveda which are very necessary for the survival of the human society. The acharrasayana is being described very elaborately which can play a very significant role in maintaining

the mental hazards of the human society. ¹Sleep, one of the important topics in Ayurveda is regarded as the sub-pillar of the human life. Sleep is described in details in 21st chapter of Charak Sutrasthana. Here, ²Charaka said that when the mana (human mind) as well as the karma (actions) of mana become tired then the mana become unable to get the knowledge from the vishayas of indria (subject matter of sense organs). In this stage the human being falls asleep. Mana or human mind can be regarded as one of the complex features of the human civilization. Day to day activities, carrying out necessary responsibilities as well other factors which are necessary for the survival are happening by the conjoint action of mana, indriya, indriya vishayas and atman. Without mana the other said factors are meaningless and because of this reason in Ayurveda mana has been given as one of the important topic to be studied very elaborately to understand every nook and corner of the functional activities of the human race. Mana plays an utmost role in getting proper knowledge. ³The vishayas of the indriyas are sabda, sparsha, rupa, rasa and gandha. ⁴Proper knowledge is obtained by the conjoint action of mana, indriya, indriya vishyas and atman. If any of these factors are having some predicament then the formation of knowledge is convulse and human being are left in dark stage of civilization. With the developmental process the human mind is getting more and more poise and on the other hand stress factors are also increasing in day to day life of the human being. As sleep is a natural process and the circadian rhythm is maintained physiologically in day to day life of a person. In normal condition the mana become abjure from getting knowledge from the factors and in that condition sleep comes. This is a natural process and it is happening in day to day life of a person. But in today's world irregular sleep has become a greatest problem and it is hampering the normal condition or day to day life of a person. It has become havoc in the society creating nuisance and ambiguous problems. If the matter is closely watched from the Ayurveda point of view then it can be seen that the mana or human mind is in constant use and there is incessant development of implausible knowledge. The human mind is not detached from the looming knowledge as a result of which the normal physiological process is hampered and proclivity to irregular sleep and insomnia is increasing day by day. The thought process as well the

judgemental process and other features which are regarded as the subject matter of mana are in continuous use and the human being become unable to detach itself from the on-going process. Much tangential thought process is one of the causative factors for the people suffering from insomnia. Here the mind becomes unable to detach itself from the ongoing process. These factors are increasing day by day in the society and more and more peoples are trying to adopt some of trivial paths as a result of which the quantity of addicted people are increasing day by day.

Ayurveda one of the ancient Indian Traditional Systems of medicine has given special attribute to sleep. Ayurveda has also accepted the physiological changes of the body due to improper sleep and has given stress that ⁵improper sleep may even lead to death of the person. According to Ayurveda, mana and sleep work conjointly and it lead to proper and efficacious sleep bringing peace and harmony in one's life. ⁶Ayurveda has said that proper sleep leads to mental stability, nourishment of the body, increase of strength, increase of virya (semen) , proper functioning of sensory system and longevity of a person whereas improper sleep leads to sorrow, weakness, impotency, lack of knowledge and may even leads to death of the person. So, from the above said facts and circumstances the importance of sleep can be generated and one can understand the factual circumstances in relation to proper sleep. In producing proper sleep mana plays a very important role. ⁷Mana is regarded as ubhayindria because it works in between karmendriya and gyanendriya. ⁸Getting proper knowledge or no knowledge is regarded as the lakshana of mana. ⁹When atman, indriya and indriya vishayas works conjointly in the presence of mana then proper knowledge is obtained. The knowledge obtained is of any form and this knowledge is very necessary for the survival of the human race. Without these functional activities no proper knowledge can develop and it would become very difficult to run the day to day activities of the human race.¹⁰ After the proper formation of knowledge, the obtained knowledge is again judged by mana and this judgment is regarded as the subject matter of mana.¹¹ After proper judgment the mana decides which particular indriya to be stimulated. ¹²Because, at the same mana cannot stimulate all the indriyas of the body and it also depends upon the desire of the person at that

period to which particular indriya to be stimulated.

¹³After that, development of buddhi (intellect) eventuate then only person become able to speak and do some actions. This whole process occurs within a fraction of second and this process is very necessary to carry out necessary activities of human life. Without this process the developmental process is totally hampered and necessary activities will curtail down making the human civilization a very down trodden civilization. ¹⁴When these above features stop physiologically then the person falls asleep and this feature happens because mana becomes tired and as a result of which the ongoing process of knowledge is obstructed. Automatically the other related ongoing process will stop leading the person to fall asleep. But in case of physiological insomnia the whole process is hampered and mana cannot make itself abstain from the upcoming knowledge's and because of this reason people used to suffer from insomnia which is one of the relevant causes of chaos in the society.

Ayurveda very deeply studied the matter and after tiring efforts could able to bring out some of the effective remedies for insomnia and has proved very effective in treating insomnia cases. ¹⁵Buffalo milk a very popular drink in India is one of the very good and effective remedy for treating insomnia cases. Clear cut description is given in Ayurveda regarding buffalo milk and it has been told that buffalo milk is very heavy and cold in nature. For that reason it is used for the treatment of insomnia. Regarding treatment purpose an elaborate description can be found in Ayurvedic classics for treating insomnia. These are as follows-

- 1) ¹⁶Taking bath by applying oil, utsadan (a paste of mustard seeds, turmeric, oil and water).
- 2) Taking meat soup of domestic, water and jungle animals.
- 3) Sali rice is also a very effective product to generate sleep.
- 4) Dadhi, dugdha, Ghrita and madya are effective in generating sleep.
- 5) Pleasing smell and sound as well massage of the body are very effective to generate sleep.
- 6) Applying tarpana in the eye, applying lepa in the facial areas as well in the head.
- 7) Sleeping bed should be clean and well maintained.
- 9) The time of sleep should be properly maintained.

These are some of the effective measures described in Ayurveda to generate proper sleep. Beside this, dhyana has proved to be a very effective measure in generating proper sleep. Ayurveda had regarded dhyana as one of the special practice for controlling the mental hazards and generating sleep.¹⁷ When reciprocity occurs between atman, mana, indriya and indriya vishayas then formation of knowledge occurs and this knowledge may bring happiness or sadness in one's life. It's opposite when mana takes shelter in atman in unperturbed manner then at this stage knowledge of happiness or sadness do not occur and the person become free from the clutch of happiness or sadness knowledge. This stage of dominancy is highly effective and to attain this stage requires years of practice. Practicing yogic principles are sufficient for controlling the mental hazards and to gain peace in one's life. When mental hazards will get controlled then automatically the difficulties to get good sleep will get controlled. Many research articles were done on this principles and it has been seen that-¹⁸Electroencephalographic (EEG) studies of meditative states have been conducted for almost 50 years, but no clear consensus about the underlying neuro-physiological changes from meditation practice has emerged. Sensory evoked potential (EP) and cognitive event-related potential (ERP) assessments of meditative practice also reflect variegated results. Some reliable meditation-related EEG frequency effects for theta and alpha activity, as well as EEG coherence and ERP component changes, have been observed. Positron emission tomography (PET) and functional magnetic resonance imaging (fMRI) studies are beginning to refine the neuro-electric data by suggesting possible neural loci for meditation effects, although how and where such practice may alter the central nervous system (CNS) have not yet been well characterized. The word meditation is used to describe practices that self regulate the body and mind, thereby affecting mental events by engaging a specific attention set. These practices are a subset of those used to induce relaxation or altered states such as hypnosis, progressive relaxation, and trance-induction techniques (Vaitl et al., 2005). Given that regulation of attention is the central commonality across the many divergent methods (R. J. Davidson & Goleman, 1977), meditative styles can be usefully classified into two types—

mindfulness and concentrative—depending on how the attention processes are directed. Most meditative techniques lie somewhere on a continuum between the poles of these two general methods (Andresen, 2000; Shapiro & Walsh, 1984; B. A. Wallace, 1999). However, meditative traditions often do not characterize themselves according to this schema but rather place more emphasis on the benefits from the practice. Mindfulness practices involve allowing any thoughts, feelings, or sensations to arise while maintaining a specific attention stance: awareness of the phenomenal field as an attentive and non-attached observer without judgment or analysis. Examples include Zen, Vipassana, and the Western adaptation to mindfulness meditation (Kabat-Zinn, 2003). Concentrative meditative techniques involve focusing on specific mental or sensory activity: a repeated sound, an imagined image, or specific body sensations such as the breath. Examples include forms of yogic meditation and the Buddhist Samatha meditation focus on the sensation of breath. Transcendental meditation (TM) fits somewhat within the concentrative forms, because practice centers on the repetition of a mantra, but the method places a primary emphasis on absence of concentrative effort and the development of a witnessing, thought-free “transcendental awareness.” The mantra is thought to eventually occupy awareness during meditative practice without concentrative effort, thereby possibly distinguishing the technique from other concentrative practices (Mahesh Yogi, 1963; Travis, Teece, Arenander, & Wallace, 2002). However, the development of a transcending observer’s Perspective on their mental contents is an implicit or explicit goal of most meditative traditions (Goleman, 1996; Kabat-Zinn, 1990; Walsh, 1982). This distinction, if more thoroughly assessed across meditative traditions, might evolve as a second dimension for the state space into which different techniques could be categorized usefully. Although these perspectives make it difficult to classify a given meditative practice as purely mindfulness or concentrative meditation, the two styles overlap in their approach toward similar goals. The former requires the maintenance of attention in a state of open perceptivity, and the latter requires narrowing of attention focus. Mindfulness-based practices tend to encourage a continual return to an attentive set that is characterized by open, nonjudgmental awareness of the sensory and

cognitive fields and include a meta-awareness or observation of the ongoing contents of thought. Concentrative techniques incorporate mindfulness by allowing other thoughts and sensations to arise and pass without clinging to them and bringing attention back to a specific object of concentrative awareness to develop an internal “witnessing observer.” Thus, the methods used to elicit specific states differ across practices, but the results similarly produce reported trait changes in self-experience: eliciting shift toward expanded experience of self not centered on the individual’s body schema and mental content (Mahesh Yogi, 1963; Naranjo & Ornstein, 1971; Ornstein, 1972; Wallace, 1999; West, 1987). An early theoretical model for understanding the neurophysiology of meditative states and traits used a continuum of autonomic arousal from parasympathetic (trophotropic) to sympathetic (ergotrophic) dominance (Fischer, 1971; Gellhorn & Kiely, 1972). Mystical experiences of consciousness can be considered related to ergotrophic states similar to those seen in psychiatric disturbance, ecstatic ritual, and hallucinogenic drug intoxication, but they also can be elicited through trophotropic meditative practice by means of a hypothetical rebound effect (Fischer, 1971). This framework has utility in reconciling the neuro-physiological arousal of peak experiences in meditative states with the more commonly observed hypo arousal of meditative practice (J. M. Davidson, 1976). However, broad and encompassing statements about “the neurophysiology of meditation” are as yet unrealistic, because brain differences among meditative practices have not been well established (Dunn, Hartigan, & Mikulas, 1999; Lazar et al., 2003; Lehmann et al., 2001; Lou et al., 1999; Lutz, Greischar, Rawlings, Ricard, & Davidson, 2004). Some progress has been made to identify structure–function CNS relationships of meditative states and traits (Travis & Wallace, 1999); changes in arousal and attention state involved in meditation are also related to hypnosis (Holroyd, 2003; Otani, 2003), drowsiness, sleep, and unconsciousness (Austin, 1998; Vaitl et al., 2005). After initial reports advocating a fourth state of consciousness originating from TM (R. K. Wallace, 1970; R. K. Wallace et al., 1971), several EEG meditation studies reported sleep like stages during meditation with increased alpha and then theta power (Pagano, Rose, Stivers, & Warrenburg, 1976; Younger, Adriance, & Berger, 1975). Subsequent

studies also seemed to suggest that meditation was a physiological twilight condition between waking and sleep, although this viewpoint did little to explain meditation state other than to indicate that it is not waking or sleeping as normally experienced (Fenwick et al., 1977; Williams & West, 1975). However, the ability to stay suspended between normal sleep and waking influenced meditation state assessment; EEG differences were found among meditation, baseline, and sleep (Corby et al., 1978; Elson et al., 1977; Stigsby et al., 1981; Williams & West, 1975). These results contributed to the perspective that meditation training affects conscious awareness at a level similar to sleep Stage I, with marked increased alpha-theta power and a suspension of hypnagogic effects in a manner not reported by non-meditators (Fenwick, 1987; Fenwick et al., 1977; Schuman, 1980; Stigsby et al., 1981; Tebecis, 1975; Young & Taylor, 1998). Mediators may stay suspended in a physiological state similar to the brief period of Stage I, in which theta predominates before transitioning to Stage II in normal individuals; such an explanation may account for increased theta levels observed in proficient mediators (Elson et al., 1977).

²⁰Changes in autonomic activity had been reported with respect to specific sleep states with predominant parasympathetic activity in SWS and sympathetic activity during REM sleep (Pivik et al., 1996; Otzenberger et al., 1997; Trinder et al., 2001; Pedemonte et al., 2005). Such sleep state dependent autonomic changes maintain the homeostasis during sleep. Aging alters autonomic flexibility leading to an overall increase in sympathetic activity along with reduced parasympathetic activity, thereby bringing about autonomic arousal and decrease in sleep quality. Reduced parasympathetic activity along with inefficient baroreflex mechanisms during REM sleep have been reported to cause unfavorable cardiac events (Somers et al., 1993; Ramaekers et al., 1999; Jones et al., 2003). Meditation practices help to bring about sympatho-vagal balance with parasympathetic predominance among experienced meditators and also in novice meditators with less practice (Wu and Lo, 2008; Zeidan et al., 2010). Meditation practices are reported to enhance the melatonin levels (Tooley et al., 2000), the precursors of melatonin especially the serotonin (Bujatti and Riederer, 1976) and noradrenalin

(Lang et al., 1979). Meditation increases melatonin concentration by slowing its hepatic metabolism or augmenting the synthesis in the pineal gland (Massion et al., 1995). Diurnal melatonin levels were found to be significantly high in meditators (approximately 300 pg/ml) than non-meditating controls (65 pg/ml; unpublished data). By considering the role of melatonin in sleep maintenance, it might be concluded that meditation practices enhance melatonin levels and hence quality of sleep.

DISCUSSION

Sleep one of the important feature for human civilization is gaining interests among the scientists around the world. Ayurveda regards sleep as one of the sub-pillars of human life and has described all the beneficiary effects of sleep in the human body which are very necessary for the survival of the human race. Insomnia or loss of sleep creates hurdles in one's life and in this matter Ayurveda has described all the harmful effects which can lead even to death of the person. Mana, one of the important entities is described very elaborately in Ayurveda in relation to sleep. It is said that when mana becomes tired and become unable to receive the knowledge from the indriya vishayas then in this stage sleep comes. The role of mana in producing sleep is very important because it is seen that because of mental hazards many people become prone to insomnia which is one of the dreaded disease that the society is facing in today's world. Road traffic accident, mental hazards, addiction and other relevant features are gaining leverage in today's world. Psychotic features are increasing day by day in the society creating hurdles in the society. Ayurveda has described much relevant treatment in this connection. Yogic practices one of the effective treatments for insomnia described in Ayurveda gaining much importance in the society. In many research articles it has been seen the beneficiary effects of meditation in producing good sleep. Changes in brain waves as well as autonomic activities were recorded and showed good result in mediators then in non-mediators.

CONCLUSION

Sleep one of the dominant and necessary physiological processes necessary for the survival of the human race.

Without sleep all the physiological processes of the body become disrupted leading to prevalence of dreaded kinds of diseases which is hindering the human civilization. Controlling the human mind through yogic practices as well other treatment procedure described in Ayurveda may bring peace and harmony in one's life.

So it can be concluded that sleep is a programme that is built in the human body naturally and any kind of change in this programming may lead to insomnia creating hurdles in one's life. This article needs further discussion so that we can reach a final conclusion in the near future.

REFERENCE

- [1] Charak Samhita/su/21/35, Tripathy B.
- [2] Charak Samhita/su/21/35, Tripathy B.
- [3] Charak Samhita/su/8/11, Tripathy B.
- [4] Charak Samhita/sa/1/18, Tripathy B.
- [5] Charak Samhita/su/21/36, Tripathy B.
- [6] Charak Samhita/su/21/36, Tripathy B.
- [7] Charak Samhita/su/8, Tripathy B.
- [8] Charak Samhita/sa/1/18, Tripathy B.
- [9] Charak Samhita/sa/1/18, Tripathy B.
- [10] Charak Samhita/sa/1/20, Tripathy B.
- [11] Charak Samhita/sa/1/21, Tripathy B.
- [12] Tripathy B, Charak samhita, Page Number 796.
- [13] Charak Samhita/sa/1/22,23, Tripathy B.
- [14] Charak Samhita/su/21/35, Tripathy B.
- [15] Charak Samhita/su/27/219, Tripathy B.
- [16] Charak Samhita/su/21/52, 53, 54, Tripathy B.
- [17] Charak Samhita/sa/1/138,139, Tripathy B.
- [18] Meditation States and Traits: EEG, ERP, and Neuroimaging Studies, Cahn B. Rael, University of California, San Diego, and University of Zurich Hospital of Psychiatry, Polich John, The Scripps Research Institute.
- [19] Meditation and its regulatory role on sleep, P.Nagendra Ravindra, Maruthai Nirmala and M.Kutty Bindu Department of Neurophysiology, National Institute of Mental Health and Neurosciences, Bangalore, India.