

CONCEPTUAL STUDY OF DINCHARYA AND RITUCHARYA CAN BE CORRELATED WITH CIRCADIAN RHYTHM AND ITS DISORDERS**Dr. Shailendra Kumar Tripathi¹, Dr. Manohar Ram², Dr. Ramnihor Tapsi Jaiswal³ and Dr. Premkant Yadav⁴**¹Post Graduate Scholar, Department of Samhita Evum Siddhant, Government Ayurvedic P.G College and Hospital, Varanasi, Uttar Pradesh, India.²Reader and HOD, Department of Samhita Evum Siddhant, Government Ayurvedic P.G College and Hospital, Varanasi, Uttar Pradesh, India.³Reader, Department of Samhita Evum Siddhant, Government Ayurvedic P.G College and Hospital, Varanasi, Uttar Pradesh, India.⁴Lecturer, Department of Kriya Sharir, Government Ayurvedic P.G College and Hospital, Varanasi, Uttar Pradesh, India.***Corresponding Author: Dr. Shailendra Kumar Tripathi**

Post Graduate Scholar, Department of Samhita Evum Siddhant, Government Ayurvedic P.G College and Hospital, Varanasi, Uttar Pradesh, India.

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ABSTRACT

Ayurveda is a life science that focuses on both aspects of health: preventive and curative. Holistic approach of health is carried out by Ayurveda science where mental equilibrium with the physical and spiritual plane is more important. Aahara (food), Nidra (sleep), and Brahmacharyama (celibacy) are collectively described as the Traya Upastambha (supportive pillars) of life in Ayurveda. By balanced use of all three, the person gets a healthy life with proper nourishment and strength. Nidra is one of the most important dimensions of health. Nidra means sleeping pattern, hours and quality of sleep. Nidra is essential for maintaining good mental and physical health. The importance of sleep has also been described in the Charaka Samhita. According to Acharya Charaka, proper and improper sleep leads to cheerfulness and unhappiness, proper and improper growth, power and weakness, potency and impotency, brainpower and non-intellect and life and death of an individual. The majority of the time, when individuals discuss circadian rhythm, the rhythm is in relation to sleep. Sleep-wake cycle is One of the most illustrative and crucial instances of the significance of circadian rhythms. Dinacharya, Ritucharya can help us to maintain the circadian rhythm. Ayurveda explains this on the basis of cyclic rhythm of *Tridoshas*. The *Doshas* *Kapha*, *Pitta* and *Vata* maintain the integrity of our body, like *Soma*, *Surya* & *Anila* maintaining the integrity of the terrestrial world.

KEYWORDS: Circadian Rhythm, Dinacharya, Ritucharya, biological rhythm.**INTRODUCTION**

All the physiological processes in our body, as well as disease processes, follow rhythmic variations in response to time and environmental factors. As per *Loka Purusha Samya Siddhanta* 'Man is a tiny replica of the Universe' and so all the changes in the environment affects human beings, since everything is derived from *Panchamahabhutas*. In Ayurveda, the cyclical variations are based on the rhythm of *Tridoshas*, *Agni*, *Sharira Bala* etc. with respect to age time of the day, seasonal changes, food intake etc. Ayurveda has described *Dinacharya*, *Ritucharya*, *Sadvritta*, *Ahara Vidhis* etc. to balance the rhythmic fluctuations of *Doshas* in a normal state. Deviation from this normal rhythm leads to various physical and mental illnesses. Proper alignment of this rhythm is essential for the maintenance of health.

In modern terms, all the physical, mental and behavioral cyclical changes in the functioning of our body are termed as biological rhythms. There are 3 main rhythms based on the length of a single cycle - circadian, infradian and ultradian. Although many biological rhythms have been identified, researches mainly focus on circadian and circannual (seasonal) rhythms. Studies have stated that the same neuroendocrine mechanisms are responsible for circadian and circannual (seasonal) rhythms. Circadian rhythm is a 24-hour cycle responding to light and darkness in the physiological process of living beings eg: sleep wake cycle, temperature regulation etc. Body functions like Sleep-wake cycle, body temperature regulation, activities such as eating and drinking, hormonal and neurotransmitter secretion etc. are regulated by Circadian cycle. The circadian cycle is controlled by a part of the hypothalamus called the

supra-chiasmatic nucleus (SCN), which is the master center for integrating rhythmic information and establishing sleep patterns. Cyclical fluctuations of melatonin, produced by pineal gland, are also vital for maintaining a normal circadian rhythm.

Circadian rhythm

Circadian rhythm is explained by *Ayurveda* using the *Tridoshas* cyclical cycle. Similar to how *Chandra*, *Surya*, and *Vayu* preserve the integrity of our earth's universe, the *Tridosha* are responsible for maintenance of our body functions. many factors affect the equilibrium of these doshas for instance i.e., *Desh*, *Kala*, *Aahar*, *Vihara*, *Ritu* (seasons) etc. Hence, the diet and regimen in every season must be in accordance with the status of dosha of the body. This maintains the circadian rhythm of the body and overall health.

Our circadian rhythm is our sleep-arouse pattern over the course of whole day. It is responsible for controlling our daily routine for sleep. Circadian rhythm is affected by many factors such as light and dark, and other factors. brain responds to various changes in environment and activates certain hormones, which results in changes in body temperature, and regulates our body to keep us arouse or make us to sleep.

Circadian rhythm regulates alertness and sleep cycles by adjusting to changes in ambient light. As part of our circadian rhythm, hormones like melatonin and cortisol may raise or decrease. Our bodies produce more melatonin at night and less during the day, which is a hormone that induces sleep. Our bodies produce more cortisol in the morning, which has the ability to increase alertness.

Melatonin production increases as the day goes on and in order to aid in falling asleep, melatonin production increases at night after the sunset. and the master clock then continues to send signals that aid in keeping us sleeping throughout the night. The master clock sends alertness inducing signals throughout the day as a result of light exposure, which helps keep us up and active. Our circadian rhythm does this to achieve a balance between our sleep and wakefulness throughout the day and night.

Our eating habits, hormone levels, body temperature, and sleep patterns are all influenced by circadian rhythms. Some people may develop circadian rhythm disturbances as a result of environmental influences or sleep issues. We can adapt to our body's natural rhythms better by upholding healthy behaviours or by following *Dincharya*, *Ratricharya*.

Dinacharya

Day to darkness and winter to spring are cycles in nature. These tidal and seasonal fluctuations are brought on by the Sun's movement. Since humans are a miniature version of the universe, they need adapt their daily habits to reflect these changes in order to maintain their health.

To maintain a balance of the circadian rhythm in the form of daily cycle of the doshas, which includes arousal in *Brahmamuhurtha*, *Dinacharya* includes person's daily regimen. It helps in various metabolic process of the body like digestion, absorption, and assimilation, and it also promotes our health, discipline, joy and longevity.

Ritucharya

Ritucharya refers to dietary, behavioural, and habit changes made in response to seasonal changes. Atmospheric changes in various Seasons occurs in the environment which have effect on our *Tridosha* as well. The changes seen in the environment as Stage of Accumulation, Stage of Aggravation, and Stage of suppression of vitiated *Dosha*. This may result in an internal disparity, which may appear as a number of physical and mental diseases. *Ritucharya* (seasonal regimen) is a set of dietary and lifestyle guidelines that help people adapt to the changing seasons without disrupting their bodies' natural balance. Studies have shown that seasonal affective disorder (SAD) is caused by the circadian cycles' improper adaptation to the lengthening of the day as the seasons change (Seasonal Affective Disorders).

Circadian rhythm disorders

Are disruptions in the body's internal clock, misaligning the sleep-wake cycle with environmental or social cues. Key disorders include.

1. Delayed Sleep Phase Disorder (DSPD): Difficulty falling asleep until late night and waking up late.
2. Advanced Sleep Phase Disorder (ASPD): Early sleep onset and waking up earlier than desired.
3. Non-24-Hour Sleep-Wake Disorder: Common in blind individuals, where the sleep cycle shifts daily due to lack of light cues.
4. Shift Work Disorder: Misalignment caused by working night shifts or irregular hours.
5. Jet Lag: Temporary disruption from crossing time zones, causing difficulty in adjusting to the new schedule.

These disorders lead to poor sleep quality, fatigue, and impaired functioning.

DISCUSSION

Based on the content from the reviewed papers, the summary of methods in *Ayurveda* to be followed to maintain proper circadian rhythm and management of disorders caused by its derangement is as follows. By following proper diet and lifestyle regimen according to diurnal and seasonal *Avasthas* of *Doshas*, normal rhythmicity can be maintained. The diurnal and seasonal variations in our body are represented by *Doshic* rhythms, that means the normal variations of *Tridoshas* according to age, time of day, food timings etc. Many studies have proved the change in physiological entities depending upon age, diurnal variation, meal, season etc. As an example, for age wise physiological changes, it can be said that RBCs count, WBC count, Hemoglobin,

Heart rate etc are more in childhood. Diurnal change can be observed as leukocytes are more in evening and less in morning etc. As an adaptation to timings of meals, it is noted that, Systolic blood pressure will be increased up to one hour after the meal. Also, during cold climatic conditions systolic and diastolic blood pressure will be more, and during warm climatic conditions blood pressure will be less.

Dinacharya advises the best times for our daily activities, such as waking, exercise, bathing, meditation, prayer, meals, study, work, exercises, and sleeping which are necessary to maintain a healthy body, mind, and soul. *Dinacharya* mentioned in Ayurvedic classics aim to maintain our circadian rhythms or internal body clocks, in order to keep normalcy of *Dosha*, *Dhatu*, *Mala*, and *Agni*. Chronodisruption is the impairment in circadian rhythms and leads to poor cognitive function, mood and sleep disorders, daytime sleepiness, reduced school and work performance, substance abuse, heart disease, diabetes, obesity, and some cancers.

Considering *Ritucharya*, diet and regimens of each *Ritu* has been mentioned by *Acharyas* according to the *Doshic Avasthas* in each *Ritu*.

mechanisms balances each other, because it is reported that WBCs and other blood cells seemed to be more in winter than in summer. In case of digestion also, there exists a rhythm in the functioning and abundance of enzymes and gut microbiome in relation to seasonal variations.

CONCLUSION

Due to the rising demand for night shift work in the modern world, circadian rhythm disturbances are a factor in many lifestyle disorders and mental illnesses. Ayurveda suggests using techniques like *Dinacharya*, *Ritucharya*, *Ratricharya* and *Ritusodhana* to align our circadian rhythm in order to improve our health, mental clarity, immunity, awareness, and physical strength. *Dinacharya*, *Ritucharya*, *Ritusodhanas*, *Sadvrithapalana*, *Achara Rasayana*, etc. would help us achieve this. We can maximize our health, mental alertness, immunity, awareness, and physical strength by aligning our circadian rhythm by methods suggested by Ayurveda like *Dinacharya*, *Ritucharya*, *Ritusodhanas* etc.

The *Ayurvedic* times for administering medications (*Bheshaja Kala*) to a sick individual correspond to the rhythmicity of the *Doshas*. Therefore, administering medication in accordance with that can increase a drug's efficacy.

By modifying one's food and lifestyle in accordance with work schedule, and also applying the knowledge of circadian rhythm in various fields of medicine we can find solution to various health problems.^[16]

Thus, *Dincharya*, *Ratricharya* and *Ritucharya* helps us to maintain our body's circadian rhythm and achieve a good health.

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