



Review Article

ROLE OF CLIMATE ON HUMAN - CONCEPT OF AYURVEDA

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ABSTRACT

Dual concept has been recognized in appreciation of *Kaala* or time employing the scholars of Ayurveda. *Saambatsara* or *Nityaga Kaala* denotes the year and climate changes throughout the year and *Atura Avastha* or *Avastika Kaala* stands for the health repute along with ailment prevalence and their control about the weather changes. The weather change can steer the earth's biological structures. Developing countries with restricted assets are expected to face a host of health consequences because of weather change, along with vector-borne and water-borne diseases. The distribution of infectious ailment includes complex social and demographic factors. Global climate change is a phenomenon this is now taken into consideration strongly associated with health and hazards. The outcomes of climate change on exposed biological incidences, in addition to societies prone to expose with disease, are a challenge for the complete scientific community. Rising temperatures, warm waves, floods, tornadoes, hurricanes, droughts, fires, lack of forest, and glaciers, in conjunction with the disappearance of rivers and desertification, can directly and circuitously concern with human pathologies which can be physical and mental.

INTRODUCTION

Ayurveda represent the evidence based scientific knowledge of philosophy. In the present topic *Kaala* or time is the cause of factors that might be produced and is taken into consideration to be the substratum of the universe.^[1] *Kaala* or time is established as one of the nine *Dravyas* or substances whilst annoying substance, it has been expressed that it possessed action or *Karma* and attributes or *Guna*, its miles combinative cause and effects represents the characteristic of the substance.^[2] The producer of all those objects which are being produced is *Kaala*. It is considered as substratum of the universe. *Kaala* is the cause of comparative knowledge of predomination or subordination, superior or inferior and remoteness or nearness, and early or past due (*Para* and *Apara*).

It is one in variety but has been divided in such a lot of ranges for realistic motive, which includes in seconds, minutes, hours, days, months and so on.^[1] On the basis of external parameters or *Aupadhika Veda*, *Kaala* has been divided as an important phenomenon to execute the proper health and care for the mankind. *Samvastsara* or *Nityaga Kaala* and *Aturavastha* or *Avasthika* denotes the state of the disease in a patient. *Samvastsara* or *Nityaga Kaala* includes year and seasons in a year in accordance to movement of the earth around the sun.^[3] The sun is closest to the earth during northern hemisphere in winter seasons as *Sisira*, *Vasanta* etc., as a result the amount of sunlight over the earth as more as 7% much intense in the winter seasons than hot seasons.^[4] On the basis of *Ayana* or solstitial movements of the earth to north or south, year is divided into *Uttarayana* and *Daksinayana*. *Uttarayana* may otherwise be called *Adana Kaala* and *Daksinayana* is called *Visarga Kaala*. Both the *Kaala* consist of three seasons as *Sisira*, *Vasanta* and *Grishma* are included in *Adana Kaala* and *Varsha*, *Sarat* and *Hemanta* are included in *Visarga Kaala*.^[5] During the period of *Adana Kaala* dehydration take place by extreme sun rays and wind with their sharp velocity and dryness, absorb the moisture from the earth. People become weak in this period. Through

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the impact of very fast-flowing Jet streams, slender air currents placed close to the tropopause, the transition between the troposphere and the stratosphere dry conditions seems. The fundamental jet streams on earth are westerly winds that flow west to east directions. These winds tend to descend over the north-western elements of India, ensuing in the improvement of atmospheric balance and dry situations observed. By way of the end of February, the temperature begins rising and there is a warm climate season in India from March to May. Most of the thunderstorms had been determined as *Kaala Baishakhi*, Mango Showers all through these months. During the summer season, particularly warm and dry winds blow over North Indian plains. They are domestically known as 'loo' [6]. In the course of *Visarga Kaala* sun moves towards the south and its power is slackened by various factors as time, course, storm and rain but the moon is not affected. The earth is relieved of heat by the rain waters and peoples become stronger.[7] From June to September, are the months of advancing South-West monsoon season. Through the end of can also, the monsoon trough similarly intensifies over north India because of high temperature. The overall path of the wind for the duration of this season is from South-West to north-east. The temperatures all through September-October begin lowering in north India. The monsoonal trough also will become vulnerable over North-West India. This is regularly replaced by way of a high strain system. The South-West monsoon winds weaken and begin retreating gradually from North Indian Plains employing November. In October the climate stays humid and warm due to continuing excessive temperature and wetland in the month of October.[8] Apart from the seasonal variations, *Kaala* is also important for the spreading of disease, pathogenesis of disease, vector borne disease, infectious disease as well as appropriate administration of drugs and diet.[9]

MATERIALS AND METHOD

The ancient Ayurvedic literatures and books of modern medical science were looked into in search of the concepts of *Kaala*. The online search engines i.e., Google Search and PubMed Database and others were searched with the headings, *Kaala* in Ayurveda, relation of *Kaala* with the prevalence of disease, climate change, and effect of climate change on public health and others. The obtained information were collected and interpreted accordingly.

Etymology and definition of *Kaala*

The eternal time is without beginning or *Adi*, middle or *Madhya*, end or *Nidhana*, self-begotten, and the lord of all attributes. Contrariety and non-contrariety of the natural attributes of drugs endued with characteristic flavor are added about with the aid of time and time is the essential aspect that controls

the births or death of dwelling beings.[10] *Kaala* or the eternal time is so known as from the truth of its no longer suffering even considered one of its very own minutes particles or subdivisions or *Kaala* to perish, through always transferring and inconsistent movement in itself, or it derives its epithet from the fundamental quality of its destroying all beings and laying their useless stays in heaps in succession. A few assert that the name is due to the reality that time blends (*Kalanam*) all beings with misery or happiness consistent with their respective acts or to its leading all beings to destruction. [11] The factor responsible for creation of all beings is known as *Kaala*. [12] *Kaala* is nothing but a manner of transformation into seasons, solistics, and many others. In another way *Kaala* or time commutates two meaning viz. the year and the state of disease in the affected person.[13]

Classification of *Kaala* according *Aupadhika Veda*

Two divisions of the time based on *Aupadhika Veda* as very important and useful for health and treatment of the mankind. Time connotes two meanings as *Samvatsara* or *Nityaga* and *Aturavastha* or *Avasthika* or the state of the disease in a patient.

Samvatsara or *Nityaga Kala*

It consists of year and seasons etc., a year may be categorized in extraordinary methods, depending upon the distinctive purposes in view. On the basis of *Ayana* or solstitial movements of the earth to north or south, year is divided into *Uttarayana* and *Daksinayana*. *Uttarayana* may otherwise be called *Adana Kaala* and *Daksinayana* is called *Visarga Kaala*. Both the *Kaala* consist of three seasons as *Sisira*, *Vasanta* and *Grishma* are included in *Adana Kaala* and *Varsha*, *Sarat* and *Hemanta* are included in *Visarga Kaala*. The consisting seasons of *Adana Kaala* and *Visarga Kaala*[13] are mainly caused by the tilt of the Earth's rotational axis away or toward the sun as it travels through its year-long path around the sun. The Earth has a tilt of 23.5 degrees relative to the "ecliptic plane" which is an imaginary surface formed by its almost-circular path around the sun. The tilt toward the sun is maximized during Northern Hemisphere summer in late June, called the "summer solstice". At this time, the amount of sunlight reaching the Northern Hemisphere is at a maximum and is the primary factor dehydration caused due to *Adana Kaala*. In late December included under *Sisira Ritu* on the date of the "winter solstice", the Earth's tilt away from the sun is maximized, leading to a minimum of sunlight reaching the northern hemisphere. The seasons, of course, are reversed in the Southern Hemisphere. The temperature contrast between the cold air pressure over the land and the relatively hot air pressure over the ocean leads to extra tropical cyclone formation and invite the *Varsha Ritu*. These storms are thus much more frequent and intense in the winter than in the

summer. On the basis of intensity of cold, heat and rain it's far divided into three.^[14] *Sisira* or *Hemanta* (winter), *Grishma* or summer season and *Varsha* or rainy seasons are the three divisions of the year characterized by cold climate, hot climate and rains respectively. Flanked by means of topic are three other seasons viz. *Pravrit* (mild rains), *Sarat* (autumn) and *Vasanta* (spring). The sun is actually closest to the Earth during Northern Hemisphere winter (not summer). Thus, the amount of sunlight averaged over the whole Earth, is as much as 7% more intense in the winter than the summer. Despite this fact, the global-average surface temperature is warmer in Northern Hemisphere summer, due to the much greater expanse of land there, and since land heats to a higher temperature than the ocean does. *Pravrit* season is

characterized through the beginning of rains after which follows the rainy season due to the lower temperature of the ocean than the land and so the air above it keeps a higher pressure. Due to the fact that winds drift from regions of the high-pressure area to low, this deficit in pressure over the continent causes winds to blow in an ocean-to-land circulation, called sea breeze. As winds blow from the sea to the land, the moist air is brought to the land and causes rain. ^[15] The division of the year in to twelve months is conventional through historical Indian or Hindu calendars as well as through the Gargerian calendars. The provable comparative names of the both systems and the names of the six seasons every comprising month is unique inside the table below:^[13]

Table - I

S.NO	Seasons	Months According To Hindu Calendar	Months According To Greek Calendar
1.	<i>Pravrit</i>	<i>Asadha</i> <i>Sravana</i>	June - July July - August
2.	<i>Varsa</i>	<i>Bhadrapada</i> <i>Asvina</i>	August - September September - October
3.	<i>Sarat</i>	<i>Kartika</i> <i>Margasirsa</i>	October - November November - December
4.	<i>Hemanta</i>	<i>Pausa</i> <i>Magha</i>	December - January January - February
5.	<i>Vasanta</i>	<i>Phalguna</i> <i>Chaitra</i>	February - March March - April
6.	<i>Grishma</i>	<i>Vaisakha</i> <i>Jyestha</i>	April - May May - June

Ritu or season may be clarified by a tendency to move continuously in a cyclic manner is called as *ritu* (seasons). The period of one year is divided into six *Ritus*- *Sisira* (winter season), *Vasanta* (spring season), *Grishma* (summer season), *Varsha* (rainy season), *Sarat* (autumn season), and *Hemanta* (winter season). *Tikta* (bitter), *Kashaya* (astringent), *Katu* (pungent), *Amla* (sour), *Lavana* (salt), *Madhura* (sweet) tastes are predominated in food and medicines in respective seasons. ^[16] Climate refers to the sum total of weather conditions and variations over a large area for a long period of time (more than thirty years). Weather refers to the state of the atmosphere over an area at any point of time. The factors that influence the weather and climate are the same; they are temperature, atmospheric pressure, wind, humidity and precipitation. Weather changes in different season and its sub categorical conditions specially wind flow and characteristic features of wind are correlated with Ayurveda and furnished below in table II ^[17]

Table - II

Season	Months	Direction & features of wind
<i>Sisir</i>	December - January January - February	During winter, there is a high-pressure area north of the Himalayas. Cold dry winds blow from this region to the low-pressure areas over the oceans to the south.
<i>Vasanta</i>	February - March March - April	During this season, the northeast trade winds prevail over the country. They blow from land to sea and hence, for most part of the country, it is a dry season.
<i>Grishma</i>	April - May	In summer, a low-pressure area develops over interior Asia, as well as, over

	May – June	northwestern India. This causes a complete reversal of the direction of winds during summer. Air moves from the high-pressure area over the southern Indian Ocean, in a south-easterly direction, crosses the equator, and turns right towards the low-pressure areas over the Indian subcontinent. These are known as the Southwest Monsoon winds.
Varsha	June - July July – August	The upper air circulation in this region is dominated by a westerly flow. An important component of this flow is the jet stream.
Sarat	October- November November-December	During October-November, with the apparent movement of the sun towards the south, the monsoon trough or the low-pressure trough over the northern plains becomes weaker. This is gradually replaced by a high-pressure system. The south-west monsoon winds weaken and start withdrawing gradually. By the beginning of October, the monsoon withdraws from the Northern Plains.
Hemanta	December –January January – February	Continental winds come in contact with trade winds over northwestern India. The position of this contact zone is not, however, stable. Occasionally, it may shift its position as far east as the middle Ganga valley with the result that the whole of the northwestern and northern India up to the middle Ganga valley comes under the influence of dry northwestern winds.

There are six major factors controls of the climate of any place. They are latitude, altitude, pressure and wind system, distance from the sea (continentality), ocean currents and relief features. The climate control factors and their effect on changing the climate are furnished below in the table III.^[18]

Table III

S.NO	Factors	Effects
1.	Latitude	The curvature of the earth intimate the quantity of solar strength acquired and that depends consistent with latitude, ensuing, air temperature typically decreases from the equator closer to the poles.
2.	Altitude	It approaches the peak above the average sea level. The environment of higher altitudes is less dense and has low temperatures. The hills are consequently cooler during summers.
3.	Pressure And Wind System	It relies upon the latitude and altitude of the place. As a consequence, it influences the temperature and rainfall pattern.
4.	Distance From The Sea	Intense weather conditions determined. This situation is known as continentality (i.e. very hot in the course of summers and very cold in the course of winters).
5.	Ocean Currents	Ocean currents along with onshore winds affect the climate of the coastal areas, e.g. Any coastal area with warm or cold currents flowing past it; will be affected if the winds are onshore.
6.	Relief Features	High mountains act as boundaries for cold or hot winds and cause precipitation if they are high enough. The leeward aspect of them lies incredibly dry.

The direction of wind flow in different season and their effect on the human health and prevalence of disease has been introduced by Ayurvedic scholars. Direction of wind, their particular attributes in concern season and disease prevalence has been furnished in table IV and table V.

Table – IV^[19]

Direction of Vayu	Attributes	Prevalence of disease
South	<i>Swadu, Laghu, Sita Virya</i>	<i>Rakta, Pitta Prasamaka, Good for eye, Vata Samak</i>
West	<i>Tikshna, Rukshma</i>	<i>Mitigates Meda, Pitta and Kapha Aggravates Vayu</i>
North	<i>Sita, Snigdha, Madhura, Mridu</i>	<i>Aggravates Doshas Bestows strength to healthy</i>

		persons
South- East <i>Agneya</i>		Burning sensation and dryness
South- West <i>Nairit</i>		Does not cause burning sensation
North-West <i>Vayabya</i>	Bitter	
North-East <i>Ishan</i>	Pungent	

This *Nityaga* type of *Kaala* can be further divided in to *Pakshya* (fortnights), *Ahoratra* (day and night) and so many other divisions.

The particular season manifested itself in excessive nature regarded as excessive utilization of time and whenever the particular season manifested itself in lesser manner should be considered as non-utilization of time and on the other hand characteristics of a particular season are contrary to the normal phrase should be accounted as wrong utilization of time. These three factors are considered as the fundamental causes of disease.^[21] Warmer average temperatures will lead to hotter days and more frequent and longer heat waves. Exposure to extreme heat can lead to heat stroke and dehydration, as well as cardiovascular, respiratory, and cerebrovascular disease. On the other hand warmer temperatures and shifting weather patterns can worsen air quality, which can lead to asthma attacks and other respiratory and cardiovascular health effects, these changes will lead to an increase in heat-related deaths. These very conditions are caused due to *Atiyoga* of *Kaala*.^[22] Due to *Mithya Yoga Kaala* the Vector borne diseases are developed which include mosquitoes, ticks, and fleas. These vectors can carry infectious pathogens, such as viruses, bacteria, and protozoa, from animals to humans. A change in temperature, precipitation, and extreme events increases the geographic range of diseases spread by vectors. As for example, extreme temperatures as too cold, hot, wet, or dry may influence the location and number of mosquitoes that transmit West Nile virus.^[23] Climate change increases the risk of illness through increasing temperature, more frequent heavy rains and runoff, and the effects of storms. Health impacts may include gastrointestinal illness like diarrhea, effects on the bodies nervous and respiratory systems, or liver and kidney damage. Climate impacts can affect exposure to waterborne pathogens like bacteria, viruses, and parasites such as *Cryptosporidium* and *Giardia*; toxins produced by harmful algal and cyanobacteria blooms in the water. Higher air temperatures can increase cases of *Salmonella* and other bacteria-related food poisoning because bacteria grow more rapidly in warm environments. These diseases can cause gastrointestinal distress and, in severe cases, death.^[24] Depending upon the nature of season the disease may be categorized into *Prakrita* and *Vikrita Vyadhai*. *Vatika Jwara* is manifested irrespective of its seasonal occurrence and is difficult to cure. *Pittaja Jwara* occurs during season other than autumn and *Kaphaja Jwara* occurs during seasons other than spring.^[25] *Kalaja Vyadhi* can be connected to the growth of the body and the state of the organs. As the time passes the bodily changes are observed like graying of hairs, wrinkles on the skin etc. which cannot be reversed by medicines. *Akalaja Vyadhi* is the diseases which occur untimely. For eg: disease occur in *Youvanavastha* (young age).^[26]

Apart from the diseased condition the time has a prime importance to restore the good condition of health in a healthy person by proper implication of *Ahara*, *Nidra* and *Bramhyaccharya* including intake of *Rasayan* therapy. With due consideration of *Dosha Pravritti* to the daily and seasonal diets are furnished in Table – VII. ^[27]

Table – V ^[20]

Direction of <i>Vayu</i>	Attributes	Prevalence of disease
<i>Purba Disha Vayu</i>	<i>Sita, Ati Madhurjya</i>	<i>Vata Prokopa</i> , Unwholesome
<i>Agneya Disha Vayu</i>	<i>Tikta, Madhura</i>	<i>Kapha</i> and <i>Vataja Roga</i>
<i>Dakshina Disha Vayu</i>	<i>Tikta, Kasaya, Madhura, Atimanda, Sugandha, Sitala</i>	Neither too hot nor too cold. May cause <i>Kaphaja Roga</i>
<i>Nairita Disha Vayu</i>	<i>Rukshma, Ushna, Katu, Amla</i>	<i>Pitta</i> and <i>Raktaja Roga</i> . <i>Vata-kaphalwon</i> .
<i>Paschim Disha Vayu</i>	<i>Ati Suskshma</i>	<i>Raktapitta</i>
<i>Vayabya Disha Vayu</i>	<i>Prasastha, Kasaya, Samsuskshma</i>	Most wholesome <i>Vayu</i>
<i>Uttar Disha Vayu</i>	<i>Swadu, Kasaya</i>	<i>Medhajanaka</i> , wholesome <i>Vayu</i>
<i>Ishan Disha Vayu</i>	<i>Sitala and Chanchal</i>	<i>Kapha</i> and <i>Vayu</i> provokating, not suitable for <i>Kshya</i> and <i>Swasa Roga</i>

Table - VII

Season	Doshik Condition	Suitable Rasa	Suitable Foods
Sisir	Kapha Chaya	Snigdha, Amla, Lavan	Fatty flesh of Udaka & Anuipa Desha, Velasaya Mamsa, Madira & Sidhu with honey, Godugdha Ikshu Vikriti, Taila, Nava Odana, hot water.
Vasanta	Kapha Prokopa	Laghu, Kashyay, Katu, Tikta	Yava & Godhuma (wheat), Sarabha, Sasak, Ena, Lava, Kapinjala Mamsa, Sidhu & Mridvika.
Grishma	Vata Chaya	Madhur, Sita, Drava, Snigdha	Sali, Jangal Mriga & Pakshi Mamsa, Ghrita Dugdha Plenty of water.
Varsha	Pitta Chaya & Vata Prokopa	Madhur, Snigdha	Old Yava, Godhuma, Sali, Jangal mamsa, majja with Jusa, Mridvik or Arista, boiled and cooled water with honey.
Sarada	Pitta Prokopa & Vata Prasama	Madhur, Laghu, Sita, Tikta	Sali, Yava, Godhuma, Mamsa of Lava, Kapinjala, Urabhra (Sheep), Sarva, Sasak, Ghrita admixture with Tikta Oushadha. Water: Hamsodoka
Hemanta	Pitta Prasama	Madhur, Amla, Lavan, Ushna	As prescribed in Sisira Ritu.

Due consideration of *Haritaki* as a *Rasayan* described in Ayurvedic literatures for the benefit of restoring the good health. The effect of *Haritaki* as a *Rasayan* requires some supportive agents in concern with the relative seasons in the form of *Anupana* (vehicle). Different nomenclature has been revealed from literatures, their synonyms; therapeutic property, seasonal activity and *Anupana* for the particular season are furnished in table-VIII and table-IX. [28]

Table - VIII

S.No	Synonyms	Therapeutic property
1.	Vijaya	Sarvaroga (cures all diseases)
2.	Rohini	Vrana (wound healing)
3.	Putana	Pralepa (used for application)
4.	Amruta	Shodhana (for purification)
5.	Abhaya	Netra roga (eye diseases)
6.	Jeevanti	Sarvaroga (cures all diseases)
7.	Chetaki	Rechaka (purgative)

Table - IX

S.No	Seasons	Anupana
1.	Sisira	Haritaki with Pippali (<i>Piper longum</i>)
2.	Vasanta	Haritaki with Madhu (honey)
3.	Grishma	Haritaki with Guda (jaggery)
4.	Varsha	Haritaki with Saindhava (rock salt-sodium chloride)
5.	Sarada	Haritaki with Sharkara (Sugar candy)

DISCUSSION

Ayurveda in addition to the modern medical system gives special significance to the time or *Kaala*. *Pancha Bhautika Tatwa* and *Tridosash Tatwa* are the fundamental sense of therapy for health and disease. *Vata Dosh* is primary in old age (after 60 years of age), in the afternoon (3 to 7 pm), late-night time (2 to

6 am), and at the end of the digestion of meals. *Pitta Dosh* is fundamental in middle age, mid-day, mid-night time and throughout the middle duration of digestion. *Kapha Dosh* is predominant at an early age, in the forenoon, in the early part of the night, and in the early period of digestion.^[29] The associated

practice of partaking food regimen in seasonal context its miles advised to take meals within the morning wherein the nights are too lengthy (*Hemanta* and *Sisira Ritu*) in traits contrary of the traits of the season. In *Grishma* and *Pravrit* Season in which days are very prolonged, food within the afternoon is suitable and in *Sarat* and *Vasanta* in which day and night are identical meals prefer to partake in the middle of the day or dividing in day and night time similarly. To maintain the sickness loose condition it's also to be cited that the remaining eight days of *Kartika Masa* or 1/3 week of November and primary eight days of *Agrahayana* or fourth week of November are called *Yamadramstra Kaala*. During this period one may be healthy if he is taking the most effective small quantity of meals and the ultimate and primary seven days of each *Ritu* (preceding and following) are together known as *Ritusandhi Kaala*. Within the path of this period, the regimens of the preceding season must be discontinued steadily and those of the succeeding season observed slowly. If alternatively, they may be discontinued or adopted, disease due to *Asatmya* develops. The *Daksinayana Kaala* or *Visarga Kaala* is the period of hydration, whilst the *Uttaryana* duration is called *Adana Kaala* or the period of dehydration.^[30] Those intervals have got unique action of air, sunrays, and moon rays and those impact the health of the individual. *Prajnaparadha*, *Asatmyendriyarthasamyoga* and *Kaala Parinama*^[31] are considered as essential causative factors of disease. The disease may also cause by using the seasonal deviations as noted in a particular season manifests itself excessively; this have appeared as immoderate utilization (*Atiyoga*) of the time. If the season manifests itself in a lesser degree, it might be its non-utilization (*Ayoga* or *Hinayaga*). If on the other hand, characteristics of a season are contrary to normal ones, this will be wrong utilization (*Mithya Yoga*) (for example rain fall in the winter, cold in rainy season etc.^[32] Climate change is a phenomenon that is considered strongly related to human activities. An atmospheric carbon dioxide level is rising due to constant climate change. Covering areas from intense weather events to shifts in vector-borne diseases. Flood and excessive rain growth in diarrheal disease, cholera, dysentery, and typhoid are of specific concern. Rising sea-surface temperatures are anticipated to increase tropical cyclone intensity and the height of storm surges and toxic exposures, and starvation and malnutrition risk due to food shortage in that particular climate. Warmer weather could cause water-borne diseases to become greater frequent, which include cholera and diarrheal diseases such as giardiasis, salmonellosis, and cryptosporidiosis. Modifications in temperature, rainfall, humidity, and immunity levels also affect malaria transmission. The arboviral diseases chikungunya and dengue may also be prompted

employing climate, as each is transmitted through the common vector *Aedes aegypti*.^[33] Aside from the discussion of seasonal disease prevalence Ayurveda additionally emphasizes the mode of administration of therapy in connection to *Kaala*. Eight instances are prescribed for *Prayogika* (habitual) smoking, due to the fact *Vata* and *Kapha* gets vitiated in the course of these times. These timings are after bathing, eating, tongue scraping, sneezing, brushing the teeth, inhalation of medicated substances, after application of collyrium, and after sleep. No doubts drugs and diets are beneficial for health however if they are at variance with time or *Kaala Viruddha*,^[34] they consider unwholesome. In addition to the impact of abnormal season on the human body producing diseases, there is a normal cycle of *Dosha* in terms of season or time. *Vata* gets excited in the rainy season whilst *Pitta* and *Kapha Dosas* get excited in autumn and spring respectively. It is recommended that to sell effective health and prevent the incidence of the diseases one needs to take *Vasti* (medicated enema) at the end of summer, *Virecana* (purgation) during autumn, and *Vamana* (emesis) during the spring season.^[35] *Kaala* also influences the food behavior and prevalence of the disease even it can purpose the epidemic situations. The eastern peoples are habitual eaters of fish and rice. They are probably to be concerned with phlegmatic (*Kapha*) and biliary complaints. Prevalence of elephantiasis and goiter (*Galaganda*) are mostly seen amongst them. People within the south habitually consume fish of the river waters and of the sea. They are commonly afflicted with *Kushta* diseases. People of the outskirts of *Kambhoja* continuously devour *Masura*, *Yava*, *Godhuma*, *Tila* and *Koddal*. Complaints of piles are very commonplace there. Peoples of the west highly desire meat, wines, and women; they (also) love adventure. They are seen to be excessively by *Rajyakshma*. Peoples of *Bahluka* mostly devour particularly warm food, and additionally meat that is trickling with juices (*Abhishyandini*) in addition to *Panakas* (syrups) and watery liquids (*Audakani*); while peoples of mountainous areas (*Parvata*) and their neighboring locations (*Upatyakah*) are by using nature itself vulnerable to seize cataract or *Abhishyanda* is the common disease in them; and, the regions of *Bahluka* country are generally afflicted with the disease of *Balasaka*. An epidemic in terms of *Janamara* and *Janopadadhvamsa* that kills entire populations due to derangement in seasons referred to as seasonal epidemics. When in any particular region, the cloud does no longer rain in the months of the rainy season but rains within the season of *Hemanta*, it is in such times of seasonal derangement that the epidemic or the killer disorder of populations commences or sets forth its activities. Recourse to common and fasting, remains courageous, engages in saluting the Brahmins and in such ways continues healthy and unfastened

from mental forebodings and stresses and additionally takes recourse to using the requisite incantations (*Mantra*) and medicines receive free of the assault of the epidemic. Through the unexpected heating up of the body through solar at the end of the rainy season *Pitta* gets mobilized and aggravated by means, fever occurs basically in the winter season.^[36]

CONCLUSION

Since the gross diversity in climate change in specific geographical conditions, climatological patterns, food and tradition, ailment prevalence and right habits to resume good health demands the necessity of knowing all these variations of *Kaala* and climate change through the geographical attitude. The elaboration of the knowledge of this seasonal diversity in terms of geographical variations for the better understanding of *Ritucharya* and *Dinacharya* its clinical applications are made for anticipating the health outcomes of climate change and enhancing the health through effective health care consisting of preventive health care.

REFERENCES

1. Dr. Satakari Mookerjee, Bhasa Pariccheda with Siddhanta Mukatabali by Visvanath Nyaya Pancanan, Ch. The Substance 3rd ed. Ver. 45, Calcutta: Naba Mudran (P) Ltd. 1977; p. 61.
2. R.K. Sharma, Bhagawan Das, Carak Samhita of Agnivesha, Sutra Sthan. 6th ed. Vol.-I. Ch. 1, Ver. 48. Varanasi: Chowkhamba Sanskrit Series Office; 2000; p. 33.
3. R.K. Sharma, Bhagawan Das, Carak Samhita of Agnivesha, Viman Sthan. 6th ed. Vol.-II. Ch. 8, Ver. 128. Varanasi: Chowkhamba Sanskrit Series Office; 2000; p. 283.
4. Available from: https://weatherstreet.com/weatherquestions/What_causes_the_seasons.htm Last accessed on: 25.01.2022.
5. R.K. Sharma, Bhagawan Das, Carak Samhita of Agnivesha, Sutra Sthan. 6th ed. Vol.-I. Ch. 6, Ver. 4. Varanasi: Chowkhamba Sanskrit Series Office; 2000; p. 130.
6. Available from: <https://www.gktoday.in/topic/seasons-in-india/> Last accessed on: 25.01.2022.
7. R.K. Sharma, Bhagawan Das, Carak Samhita of Agnivesha, Sutra Sthan. 6th ed. Vol.-I. Ch. 6, Ver. 7. Varanasi: Chowkhamba Sanskrit Series Office; 2000; p. 133.
8. Available from: http://117.252.14.242/rbis/india_information/climatic%20regions.htm Last accessed on: 25.01.2022.
9. R.K. Sharma, Bhagawan Das, Carak Samhita of Agnivesha, Chikitsa Sthan. 6th ed. Vol.-V. Ch. 30, Ver. 294. Varanasi: Chowkhamba Sanskrit Series Office; 2000; p. 203.
10. Dr. Satakari Mookerjee, Bhasa Pariccheda with Siddhanta Mukatabali by Visvanath Nyaya Pancanan, Ch. The Substance 3rd ed. Ver. 46, Calcutta: Naba Mudran (P) Ltd. 1977; p. 62.
11. Dr. Jyotir Mitra, Susruta Samhita by Kaviraj Kunjalal Bhishagratna, 1st ed. Sutra Sthan, Vol.-I, Ch.6, Ver. 2, Varanasi: Chowkhamba Sanskrit Series Office; 1998. p.43.
12. R.K. Sharma, Bhagawan Das, Carak Samhita of Agnivesha, Viman Sthan. 6th ed. Vol.-II. Ch. 8, Ver. 76. Varanasi: Chowkhamba Sanskrit Series Office; 2000; p. 251.
13. R.K. Sharma, Bhagawan Das, Carak Samhita of Agnivesha, Viman Sthan. 6th ed. Vol.-II. Ch. 8, Ver. 125. Varanasi: Chowkhamba Sanskrit Series Office; 2000; p. 280.
14. Available from: <https://www.gktoday.in/topic/seasons-in-india/> Last accessed on: 25.01.2022.
15. Available from: https://weatherstreet.com/weatherquestions/What_causes_the_seasons.htm Last accessed on: 25.01.2022.
16. Prof. K.R. Srikanta Murthy, Vagbhata's Astanga Hridayam, Sutra Sthan. 5th ed. Vol.-I, Ch.3, Ver. 3-6, Varanasi: Krishnadas Academy; 2003; p.34.
17. Available from: www.civildaily.com/the-winter-season-january-february/ Last accessed on: 25.01.2022.
18. Available from: <https://ncert.nic.in/ncerts/l/iess104.pdf> Last accessed on: 25.01.2022.
19. Prof. K. R. Srikantha Murthy, Bhavprakash of Bhavamishra, 2nd ed. Sutra Sthan, Vol.-I. Ch.5. Ver.194-198. Varanasi: Chowkhamba Krishnadas Academy; 2000; p. 103.
20. Harit Pandit Hariprasad Tripathi, Harit Samhita, 2nd ed. Ch.5, Ver. 43-44, Varanasi: Chaukhamba Krishnadas Academy, p. 34.
21. R.K. Sharma, Bhagawan Das, Carak Samhita of Agnivesha, Sutra Sthan. 6th ed. Vol.-I. Ch. 11, Ver. 42. Varanasi: Chowkhamba Sanskrit Series Office; 2000; p. 225.
22. Available from: <https://www.who.int/news-room/fact-sheets/detail/climate-change-and-health> Last accessed on: 25.01.2022.
23. Available from: https://www.cdc.gov/climateandhealth/effects/air_pollution.htm Last accessed on: 25.01.2022.
24. Available from: <https://www.cdc.gov/climateandhealth/effects/vectors.htm> Last accessed on: 25.01.2022.
25. R.K. Sharma, Bhagawan Das, Carak Samhita of Agnivesha, Chikitsa Sthan. 6th ed. Vol.-III. Ch. 3, Ver. 48-49. Varanasi: Chowkhamba Sanskrit Series Office; 2000; p. 125. (Ch.Chi.3/48-49)

26. Dr. Jyotir Mitra, Susruta Samhita by Kaviraj Kunjalal Bhishagratna, 1st ed. Sutra Sthan, Vol.-I, Ch.24, Ver. 7, Varanasi: Chowkhamba Sanskrit Series Office; 1998. p.243.
27. R.K. Sharma, Bhagawan Das, Carak Samhita of Agnivesha, Sutra Sthan. 6th ed. Vol.-I. Ch. 6, Ver. 4-48. Varanasi: Chowkhamba Sanskrit Series Office; 2000; p. 130-142.
28. K.C. Chunekar., Bhavaprakasha nighantu of Bhavamishra, Vol-I., 9th ed., Ver. 11-18, Varanasi: Choukhamba Bharati Academy; 1999; p. 8-10.
29. Prof. K.R. Srikanta Murthy, Vagbhata's Astanga Hridayam, Sutra Sthan. 5th ed. Vol.-I, Ch.1, Ver. 7, Varanasi: Krishnadas Academy; 2003; p.6.
30. R.K. Sharma, Bhagawan Das, Carak Samhita of Agnivesha, Sutra Sthan. 6th ed. Vol.-I. Ch. 6, Ver. 8. Varanasi: Chowkhamba Sanskrit Series Office; 2000; p. 134.
31. R.K. Sharma, Bhagawan Das, Carak Samhita of Agnivesha, Sutra Sthan. 6th ed. Vol.-I. Ch. 11, Ver. 43. Varanasi: Chowkhamba Sanskrit Series Office; 2000; p. 226.
32. R.K. Sharma, Bhagawan Das, Carak Samhita of Agnivesha, Sutra Sthan. 6th ed. Vol.-I. Ch. 1, Ver. 45. Varanasi: Chowkhamba Sanskrit Series Office; 2000; p. 29.
33. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3978971/>Last accessed on: 25.01.2022.
34. R.K. Sharma, Bhagawan Das, Carak Samhita of Agnivesha, Sutra Sthan. 6th ed. Vol.-I. Ch. 26, Ver. 87. Varanasi: Chowkhamba Sanskrit Series Office; 2000; p. 485.
35. Dr. Jyotir Mitra, Susruta Samhita by Kaviraj Kunjalal Bhishagratna, 1st ed.Sutra Sthan, Vol.-I, Ch.6, Ver. 37, Varanasi: Chowkhamba Sanskrit Series Office; 1998. p.53.
36. Dr. K.H. Krishnamurthy, Bhel Samhita, Text with English translation, Reprint; Sutra Sthan, Ch.13, Ver.2-10, Varanasi: Chaukhamba Visvabharati; 2008. p. 60-61.

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