

# GLOBAL ACADEMIC RESEARCH INSTITUTE

COLOMBO, SRI LANKA



## GARI International Journal of Multidisciplinary Research

ISSN 2659-2193

**Volume: 09 | Issue: 01**

On 31<sup>st</sup> March 2023

<http://www.research.lk>

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Medicine, Sri Lanka | GARI Publisher | Ayurveda | Volume: 09 | Issue: 01

Article ID: IN/GARI/SL/ICASUMP/2022/109CDEC | Pages: 158-177 (20)

ISSN 2659-2193 | Edit: GARI Editorial Team

Received: 19.11.2022 | Publish: 31.03.2023

# AYURVEDA PERSPECTIVE OF MANAGEMENT OF PANDEMICS WITH CONCERNING DINACHARYA

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## **ABSTRACT**

“Epidemics” are more complicated diseases collection which is defined as janapadodhwansa, aupasargika roga, māraka, janamāra, and āganthuja roga in the Ayurveda classics. According to Ayurveda evidence, Adharmaya is the main causative factor of Epidemics. And most effective factors which are affected by epidemics are Vayu, Jala, Kala, and Desha. These factors are polluted due to unrighteous rule and people who became unrighteous. Not only in the present era but also ancient period, massive deaths were reported due to pandemics. Due to the unlimited number of people dying, a reasonable curiosity and a question arose to find a suitable solution for the current pandemic. The final destination of this review was reviewing preventive measures as well as treatment methods for pandemics. This literature review has been done with Charaka Samhita, Sushruta Samhita, Ashtangahrida Samhita, and research articles published from 2010 to 2020. Ayurveda classics mentioned suitable management procedures by using behavioral patterns, dietary regimens, and preventive measures for preventing pandemics. Data of the literature study revealed that people should be changed from their substandard daily routine to standard daily routine and follow a proper lifestyle to break the pandemics. Dinacharya, rithucharya, sadvritta, and achara rasaya inculcate discipline in a person and take on the right path and teach good health habits. As a therapeutic

measure, vyadhikshamathwa is the main point of managing Epidemics. People should have treated with Rasayana karma, ojowardhaka therapy, vajikarana therapy, lehana karma, and the other Ayurvedic therapies of management. If a person can maintain the behavior correctly, that person can surely get longevity.

Keywords: Janapadodhwansa, Dinacharya, Epidemics management, pandemics

## **INTRODUCTION**

### **Background of the research**

Epidemiology is very clearly mentioned in Ayurveda as Janapadha roga, Aupasargika roga, Maraka, Janamara, and Aganthuja roga. This research was conducted with classical books, and electronic databases including PubMed Scopus, Google Scholar, and Journals published from 2010 to 2020. As classical books were appropriated such as Charaka samhitha, Susrutha samhitha, and Ashtangahruda samhitha. Other traditional textbooks such as Mahāwanshaya, Jāthaka katha books. As well as recordings, magazines, newspapers, etc. were used. The search terms were “epidemics with Ayurveda treatment”, “epidemic”, “pandemic”, “Janapada roga”, “Aupasargika roga”, “communicable diseases”, “Janapadodhwansa” and “Vyadhi kshamathwa”. The research was conducted for revealed Ayurveda management based on behavioral

treatments and preventive measures for pandemics.

According to the information obtained during the data collection were revealed people faced more severe pandemics in the past era as well as the current global pandemic of Covid-19. Considering the current social situation, Covid-19 had been overspread in all over the countries. The Malaria pandemic, which affected 101 countries in 2009, accounted for approximately 1.5-1.7 million deaths. During 1934-35, 82,000 deaths were reported due to the Malaria epidemic in Sri Lanka. By 1968-70 it was slightly lower and by 2016 the Malaria epidemic was completely eradicated. Influenza viral infection killed nearly one million people in India from 1918-19. (Doctor magazine, 2020). This worst pandemic in recorded history caused approximately 546,000 excess deaths in the United States and killed an estimated 50 million people or more worldwide. (Johnson and Mueller, 2002) (Taubenber and Morens, 2006).

The first pandemic of the 21st century was caused by a novel H1N1 influenza virus. This virus was first detected in Mexico in March 2009. March 19, 2010, has been recorded with millions of cases worldwide and at least 16,813 deaths documented by WHO. (World health organization, 2009). Nowadays the worst COVID-19 global pandemic has spread to 220 countries around the world. As of July 30, 2021, the number of people infected with the virus is 197,562,863 and the global death toll is reported as 4,218,551. With the growing number of COVID 19, even the world's leading powers at the time, such as the United States, India, China, and United Kingdom was in a recession. 246,160 new cases of global COVID-19 infections and 13,185 deaths are daily reported these days (to July 30, 2021). Altogether 423,244 people have died while 31.5 million people have been infected with the virus in India. (To July 29, 2021) As of 2021 May 19, the number

of both confirmed and presumptive positive cases reported in the United States had reached 35.5 million with over 628,503 death reported among these cases. In the United Kingdom amounted to 129,515 deaths on July 29, 2021. In Brazil 19.8 million cases are reported with 554,626 deaths. In Russia 6.2 million cases are reported with 157,771 deaths (Alimetov, 2007)). In Sri Lanka 2,370 daily cases are reported (to July 30, 2021). As of July 30 number of total cases had reached 304,202 with 4,324 deaths (Department Government health, 2021).

According to the above data, not only developing countries but also developed countries are worst damaged by the COVID-19 pandemic. Nowadays there are many kinds of anti-viral vaccines are introduced by various countries such as Pfizer-BioNTech, Moderna, Johnson & Johnson's Janssen, mRNA vaccines, Viral vector vaccines, Astrazeneca, Novavax (Adam, et al., 1946) Sinopharm and Sputnik V, etc. But there has not been good progress to cure or control the pandemic all over the world. It should be changed something in the entire of the human. The pandemic is a social and an economic crisis just as much as it is a health issue, its repercussions, severe and far-reaching, are being felt across the world. This is the main reason for Ayurveda management should be introduced to society. The main object of this research was to find out management procedures for controlling this humble crisis.

The scientists who have researched and experimented with Epidemic diseases have found that humans may face similar epidemics in the future. Gratifying to note that various vaccines have been developed to combat COVID-19. But all individuals are helpless in the face of the continuing global pandemic. And also the number of COVID deaths has increased day by day. Therefore, intend to study the treatment methods which are mentioned in

Ayurveda for pandemics. During data collection, a good example of shreds of evidence and curative methods were found in Ayurveda as well as Buddhist literature. Among them, Yukthivyapashraya chikitsa was the main method and in addition, Daiwavyapashraya chikitsa was mentioned.

In addition, Acharya Bhawamishra has mentioned Kushta, Upadansha or Phiranga, and plague fever as contagious diseases. Also, Susrutha samhitha states that Krimi roga, certain skin diseases (Charma roga), Nethrābhishanda, etc. are among the epidemics. The main characteristic feature of these diseases is the simultaneous spread of a large population suffering from the same symptoms. Ayurveda has mentioned, Adharmaya (iniquity) is the main cause of Epidemics. The factors of Vayu (air), Jala (water), Kala (seasons), and Desha (land) are polluted due to unrighteous rule and people becoming unrighteous. Therefore it causes Janapada roga. This is why the chapter Sadvrutha is mentioned in the Charaka samhitha which teaches the correct way of living. And also lots of preventive measures has mentioned in Ayurveda classics to avoid such diseases. Such as procurement of medicine in their high potential phase or period well before the outbreak of the epidemic, improving immunity and strengthening the body, and moving to safe places away from the polluted environment, air, water, and so on.

As a solution for this matter, Ayurveda has widely mentioned Vyadhikshamathwa (the development of immunity) in individuals concerning epidemics and pandemics. It can lead to longevity and increase disease resistance. As well it fulfills both the main objectives of Ayurveda  
“Swasthasyaswāstharakshanamāthurasya wīkarashamana”.

### **History of the Epidemic diseases according to Ayurveda**

Ayurveda is an excellent Shāstra that teaches the nature of the Ayusha with Hitha, Ahitha, Sukha, and Dukkha ayusha. Ayurveda gives good comments for the understanding of Ayusha (life). The length of the Ayusha is determined by the Indriya gochara, Chakshuradiya, Manasa, and Buddhi, as well as the distorted features. According to Ayurvedawatharanaya, the main reason for bringing Ayurveda to the earth was the severe epidemic in India at that time. The most first medical council (rishi sammelanaya) was convened in the Himalayan mountain by sages to find the answer to death. Following a unanimous decision, the sage Bhāradwaja agreed to go for Sakra dewendra to seek knowledge of Ayurveda. After the visit, sage Bhāradwaja came to the earth and imparted that knowledge to sage Āthreya. In this way, Ayurveda was established and spread all over the world and save the illness people from diseases.

The history of Sri Lanka said that the Rathana sūthra was recited during the reign of King Upathissa in 368-410 BC to control the plague called Upasagga. The Mahāwansha states that King Upathissa and all the people of the country followed Pehewas for three days and offers robes to the monks on the last day. It was an important matter to develop the mental strength (chiththa shakthi) needed to cope with disease through the building of a religious state. Modern psychology has shown that strong emotions build up immunity in a person. In the case of an epidemic, the ancient Ceylonese people followed the basic simple practices of medicine. At that time the villagers called the plague Waduru wasangatha and Deiyange asanipa. There was no proper treatment in that society and the disease was cured by developing immunity itself. This is mentioned in the Eda heladiwa book written by Robert Knox at that time.

The spread of epidemics in Ceylon had increased with the European invasions. For example, mentioned in the “Tri Sinhale” book that King Sri Wickramarājasingha also contracted smallpox. According to the “Eda Heladiwa” book, Shanthi karmas (Peace ritual performances) were unsuccessful for these diseases. People who suffered from these diseases were isolated and treated in a rural community. The quarantine which is taken during the COVID-19 epidemic was well organized in the rural community as well. Self-quarantine was performed on days 3,7,21 depending on the condition of the diseases. There was no connection between the whole family and the neighbors. But the neighbors provided food and other necessities from a distance for the whole family, including the sick person. The patient was provided with a separate room, dishes, and cups. This method prevented the contraction of the disease in the family. It was also informed that a house would be quarantined by hanging a Nimbha branch in front of such a house. The person who regularly cares for the patient is called Sakiya dehetiya. During treatment, the patient is often sprayed with Turmeric liquid and covered with Nimbha leaves, and placed in bed. Boiled water of Hingu, dhanyaka, weniwel, parpata, etc. is given for immunization. Behaviors such as abstinence from meat and abstinence from impurities were followed. At the appointed time, the patient was cleaned with medicated water and a normal bath. As well used clothes were burned and destroyed. Bathing was also done away from public places. Also when the sick fell ill, the residents set aside offerings to God and performed almsgiving after healing. As soon as the patient recovered, the Nimbha branch was removed and it communicated that the patient has recovered. All these factors indicate that in the past there was a respectable social

order among the people. (Saddhaseeli, 2020); (Kariyakarawana, et al., 2020)

### **Definitions of Epidemics according to Ayurveda**

Diseases affecting a large population are called Janapadodhwansa and this concept is elaborated in Charaka Samhita. (Kumarasingha, 1996) It is similar to the Pandemic in modern terminology. According to Sushruta Samhita Nidana sthana has mentioned Aupasargika rogas in Kushtha nidana. There are contagious diseases and Prasnaga, Gatra Sansparsha, eating & sleeping together, sexual contact, sharing clothes and ornaments, etc. can be considered as a mode of transmission of such diseases. Kustha, Jwara, Shosha, and Netrabhishyanda are considered Aupasargika rogas which spread from person to person. (Buddhadasa, 1962) In Ashtanga Sangraha, Āganthuja Roga elaborated on what can occur due to infectious agents. Garbage, dirt, debris of dead bodies, contaminated water, and infection of urine or faces can lead pathogenesis of such diseases. Acharya Bhavamishra has mentioned in Bhāwaprakasha Kustha, Upadamsa and pandemic fever were considered contagious diseases which transmit from one person to another person. It has also been mentioned Āganthuja disease is caused by external factors. Also, he mentioned Phiranga Roga as Gandharoga under highly contagious conditions. Phirangini is a diseased female. Also mentioned are skin diseases like Kustha, Upadamsa, psychoses, and other endemic fever as Sankramika roga.

Yogaratanakara elaborated Netraroga and Twak Roga as a communicable disease that occurs through pathogens. Kushta, Sosa, Netrabhishyanda, and Jwara were considered in Aupsargika roga. In Yagvalygya Samhita Twak roga, Apasmara, Masūrika, Akshi roga, and Rājāyakshma, etc. were considered in

Sankrāmika rogas. Microbiology or pathology is the most important area when discussing etiopathogenesis. In Ayurveda Microbial infection has been mentioned as “Āganthuka nidana” in Susruta samhitha which is a causation of “Vishama jwara”. Acharya Gananath Sen has given the term “Bhuthābhishanga” (microbial infection) in the context of “vishama jwara” accepting the role of micro-organisms in their occurrence. (Yadav and Padhi, 2010)

### **Classifications of Epidemics according to Ayurveda classics**

According to Ayurveda diseases are classified as Asādharaṇa and Sādharaṇa. Asādharaṇa is a disease caused by a faulty lifestyle, Vihara, Anidra, etc. Sādharaṇa is a disease that affects a large population of people. Diseases affecting a large population are called Janapadodhwansa.

This sadharana diseases again divided into two, there are Niyatatankapraya hetu, Aniyatatankapraya hetu. Niyatatankapraya hethu can be related to the pandemic and global epidemic which occurs due to natural disasters. Such as storm floods, earthquakes, etc. Aniyatatankapraya hethu means occurs due to misbehaviors of human beings. Charaka samhitha has mentioned three types of janapadodhwans based on this factor. Such as,

1. Shastraja janapadodhwansa – The destruction of colonies due to wars. The most liable reason is unrighteousness.

2. Bhuthaja janapadodhwansa- Colonial destruction caused by a group of germs. The current covid epidemic, including smallpox, chickenpox, influenza, mumps, measles, etc. is relevant to this category. This condition is also caused by unrighteous behavior.

3. Abhishapaja janapadodhwansa- this condition arises due to the curse caused by insulting the teachers, monks, virtuous peoples, etc. This is also due to

unrighteous behaviors. (Sutar, 2020); (Sharma and Bhagawan, 2009)

According to Susruta samhitha, Aupsargika Roga is two types. Upadrava Roga does have previous disease symptoms, Prakkevala Roga does not have previous disease symptoms.

Epidemic diseases mentioned in Ayurveda classics can be listed as, Vishamajwara, Sheethalā, Dandakajwara, Karnamulikajwara, Granthikajwara, Kāla jwara, Vatashleshmikajawara, Aupasargika visuchika, Masurika, Romānthikā, Alasaka Vilambhika, Krimi roga, Rajayakshma, Kasa, Upadansha, Netrabhishyanda, and Kushta, etc.

### **A brief introduction to Epidemiology concerning the modern view**

According to the Centers of Disease Control and Prevention (CDC), the occurrence of more cases of the disease, injury, or other health condition than expected in a given area or among a specific group of persons during a particular period is known as an Epidemic.

An outbreak means a small usually localized epidemic. An epidemic is a disease that affects a large number of people within a community, population, or region. A pandemic is an epidemic that is spread over multiple countries or continents. Endemic is something that belongs to particular people or country. An outbreak is a greater than anticipated increase in the number of endemic cases. It can also be a single case in a new area. If it is not quickly controlled an outbreak can become an epidemic. Sporadic cases of the disease occur irregularly, haphazardly from time to time, and are generally infrequent (Wade, et al., 1975) (Davis, 1996)

Epidemics occur when an agent and susceptible hosts are present in adequate numbers, and the agent can be effectively conveyed from a source to the susceptible

hosts. More specifically, an epidemic may result from a recent increase in the amount or virulence of the agent, The recent introduction of the agent into a setting where it has not been before, An enhanced mode of transmission so that more susceptible persons are exposed, A change in the susceptibility of the host response to the agent, and/or Factors that increase host exposure or involve introduction through new portals of entry. Some epidemics have features of both common-source epidemics and propagated epidemics. The pattern of a common-source outbreak followed by secondary person-to-person spread is not uncommon. These are called mixed epidemics. Some epidemics are neither common sources in their usual sense nor propagated from person to person. Outbreaks of the zoonotic or vector-borne disease may result from sufficient prevalence of infection in host species, sufficient presence of vectors, and sufficient human-vector interaction. (Adam, et al., 1946)

Modern medical science also controls reservoirs (by early diagnosis, isolation, treatment, and quarantine), shattering the transmission of pathogens. As well as protecting the susceptible host by immunization, chemoprophylaxis and other nonspecific measures such as safe water supply, proper nutrition, and sanitation. (Dubey, et al., 2020)

### **Management and preventive measures of pandemics concerning Ayurveda**

According to the basic knowledge, Shodhana, Shamana, and Rasayana treatments are given for any disease condition. Therefore, this regular management can be followed in epidemic disease management. In addition, the application of remedies or preliminary actions for the prevention of epidemic diseases can also be considered a precaution. Especially behavioral manners

are the most effective precaution for controlling pandemics.

Agent, host, and environmental factors have influenced the development of infectious diseases. As well as according to Ayurveda concepts Susrutha samhitha mentioned that without the involvement of Ritu (season), Kshestra (optimal period), Ambu (nutritions), and Beeja neither a plant nor a fetus can germinate and grow. Similarly, these four factors are essentially involved to manifest the Janapada roga within the community. When the human body is considered as a Kshestra, infective agents enter the body as Beeja. These Beeja has grown in the body for a certain period and causes distress in the body. This specific period can be referred to as Ritu. The nutritional factors favoring the pathogens are called Ambu. Based on these all factors Ayurveda has mentioned that proper preventive measures like avoiding prasangath (mutual contacts), gattrasansparsath (touching), sahabojanath (eating together) to break the transmission chain and rasayana (rejuvenation therapy), panchakarma (purification procedures) help to promote the Kshestra.

Ayurveda recommends sthānatyaga as a measure of preventing the spread of infectious diseases. The literature means sthānatyaga is 'leaving the place where the epidemic is sprawling'. The importance of ancient methods of isolation, quarantine, surveillance, social distancing, and health promotion measures like rasayana to boost immunity becomes highly important in such conditions. The most important thing of prevention is to destroy the causative agent (Beeja) or prevent the transmission, promotion, and preservation of the human body (Kshestra) and change the internal and external environment to make it unsuitable to grow agents.

The life span of all living beings depends on the proper coordination of two factors, namely, daiva (divine/pre-determined) and purushakara (human effort). Daiva means one's deeds in the

previous life while purushakara stands for one's actions (deeds) in this life. Daiva will be hindered by purushakara and purushakara will be hindered by Daiva. Therefore, it is wrong to take life as definite or indefinite. If the life span in every case were predetermined, then none would be found to seek longevity utilizing acts such as incantation (chanting mantra), wearing amulets, propitiation, sacrifices, offerings, oblations, regimen, atonement (prayaschitta), fasting, and other purgative therapies, benedictory rites, genuflexion (the act of bending the knee in worship), pilgrimages and sacrificial rites. (Nishteswar, 2020)

Use of rasayana (rejuvenation therapy) to increase oja (the essence of dhatus i.e. the structural elements of the body) and thus boost the immune system and general measures to prevent transmission of infections such as snana (bath), sthanatyaga (Change of place which is beneficial similar to social distancing or quarantine /isolation), purification of atmosphere through yagya (burning specific herbs and materials) have been described which are helpful to prevent at the individual level. Primordial preventive measures mentioned in Ayurveda are healthy lifestyles such as dinacharya (day regimen), ratricharya (night regimen), ritucharya (seasonal regimen), sadvritta (good conduct), and āchararasayana (promote ethical practices). (Sharma and Bhagawan, 2009)

Primary preventive measures are proper dietary habits such as ashtawidha ahara visheshāyatana, Naimittika rasayana (rejuvenation therapy for specific disease), and age-specific rasayana. Secondary prevention is achieved through nidanaparivarjana (avoiding etiological factors) and different types of therapies such as samtarpana and aptarpana and avoiding different modes of transmission of aupasargikaroga. (Sharma and Bhagawan, 2009); (Sharma and Bhagawan, 2009)

Epidemic diseases come under the āganthuja category. Its most important preventive measures are avoidance of pragyaparadha (undesirable actions performed despite their knowledge), self-control of indriya (sensory and motor control), and usual knowledge about dosha (vata, pitta, kapha), kala (time), and ātma (related to self). (Sharma and Bhagawan, 2009) Also, various techniques have been mentioned in Ayurveda for preventing environmental levels. Among them, dinacharya is the most beneficial as a non-pharmacological treatment for pandemics. It can be related to rithucharya, sadvrutha, and achara rasayana. Because all of these methods are discussed as behavioral preventive measures.

### **The background of Ayurveda management in Pandemics**

As mentioned in the basic texts and comparison with the modern views, the concept of Vyadhikshamathwa in Ayurveda can be used to prevent the deficiency of immunity in Epidemic diseases. The Nirukti of the Vyadhikshamathwa implies “Vyadhi” means non-equilibrium of the dosha, dathu, mala of the body and “Kshmathwa” means to suppress or overcome (Masram, et al., 2014). Vyadhikshamathwa is illustrated as the power of resistance capable enough to check the progress occurrence or recurrence of the disease. The concept of Vyadhiksamatva (immunity) is of tremendous importance in the daily wellness of the human body for prevention and recovery from diseases. When etiological factors enter the body they tend to produce disease. Simultaneously, the body tries to defeat the disease. This power of the body is called Immunity. Vyadhikshamathva is not mere immunity that resists infectious agents or diseases. Rather, Vyadhikshamathva indicates a resistance against the loss of the integrity, proportion, and interrelationship amongst



the individual's doshas (bio-energies) and dhatus (tissues).

There are three synonyms for vyadhikshamathva such as sleshma, ojas, and bala. Sleshma means kapha which is consist of Singdha, Sita, Guru, Manda, Slakshna, Mrudu, Sthira gunas. The normal phase is kapha acts as bala and ojas and the abnormal phase acts as mala and papma. Bala means firm integrity of the muscles, improving the voice and complexion as well support to a person to make his natural functions. The Bala is raised in three ways. Sahaja bala, kālaja bala and yukthikrutha bala are most important to prevent diseases and recover from diseases. The ojas means the essence of the saptha dathus. The tremendous strength consisted of ojas. Life depends on ojas. However, vyadhikshamathva gives Vyadhi-balavirodhitva and Vyadhi-utpadakpratibandhakatva to all individuals. Vyadhi-balavirodhitva is the capacity or power to resist the development of disease. Vyadhi-utpadakpratibandhakatva is counterattacking strength of the body to inhibit the occurrence and re-occurrence of the disease. (Pawar and Kulkarni, 2020)

The factors which are responsible for the promotion of Vyadhikshamathva are Desha (birth country), Kala (birth time as an example hemantha- Nov-Jan and shishira- Jan-March), Favorable deposition of time (pleasant and moderate climate), Excellence in the qualities of seed as example sperm and ovum, and Āsaya as example proper anatomical and physiological status of the uterus of the mother, Excellence of the ingested food, Excellence of the physique, Excellence of the Satmya (wholesomeness of various factors responsible for maintenance of the body), Excellence of the mind, Favorable deposition of the nature, Young age of both the parents, as an example they should not be over-aged, Habitual performance of exercise, Cheerful disposition and immense love for each

other, Samyoga, Virya, Pramana, Oja, Bala, Jatakarma, Lehana karma, Suvarna karma, Dhoopana karma, Niyamita vyayama. (Kumarasinha, 1991); (Masram, et al., 2014)

Charaka has mentioned that dehagni or jataragni (digestive power) is most important for life, color (luster of the skin), strength, health, enthusiasm, plumpness, complexion, Ojas (energy), Tejas (gleam of the body), other varieties of Agni and Prana (vitality) Therefore Jatharagni is considered to be the most important sustaining factor of living beings. A strong jataragni can lead to a healthy life. It can maintain digestion, assimilation, and absorption of nutrients properly and it leads to ojaswardhana and increase vyadhikshamathva. (Kumarasingha, 1996a).

Substances, which have opposite qualities to those of bodily tissues, (when gaining entry into the body) encounter opposition by the dehadhatu (bodily tissues). (Garg, N. and Jain, A., 2017) It points out that the immune system of a person attacks any antigen, which has gained entry into the body. Acharya Charaka enumerated people who are prone to various types of infections or recurrent diseases such as, over obese individual (atisthulya), an emaciated person (atikrisha), whose muscles and blood are diminished markedly, a debilitated person (durbala), one who consumes unwholesome food (asatmya-aharasevi), one who consumes less amount of food, and whose mental faculties are weaker (alpastva) (Kumarasinha, 1991). According to the description of Acharya susruth the Ojas, is identical to what is termed "vital power". This view of the oneness of vitality with protoplasmic albumen has been adopted in the present work. Primarily it means protoplasmic matter as found in cells (Vindus). Secondly it means albumen. (Bhishagratna, 2018) According to

Vagabata opinion, there are two types of Ojas, such as Para ojas and Aparaj ojas.

This Para ojas is astabindu in quantity, if decreases then the person will die. Aparaj ojas is ardhanjali in quantity. If it decreases or vitiated manifest abnormalities. It is snigdha (essence) and somatmaka (mild and cool) in nature. Though predominately white, has got some yellowish and whitish tinge. Ten great blood vessels connected to the heart carry the Rasatmaka Ojas, on which the whole life process itself is dependent. (Murthy, 2001). As this mention above, vyadhikshamathwa is the best power of resistance to diseases. Not only the dietary and medicinal beverages but also

behavioral routine is most effective for grew up the vyadhikshamathwa. This paper revealed that a daily routine is most effective for a healthy, wealthy life. Combining Sadvrutha, Achara rasayana, and Ritucharya with dinacharya, will create good discipline in a person and develop the vyadhikshamathwa in the mind itself.

Annotation of Dinacharya as a prevention and promotion factor

Table 1 The effects of dinacharya (Kaushik, et al., 2018); (Murthy, 2001)

Activity	Effect on dosha	Prevention of	Promotion of
Early rise	<i>Vatanulomana</i> <i>Kapha shamana</i>	Constipation Flatulence	<i>Ayu, Agni, Dhee,</i> <i>Dhritho, Smruti</i>
<i>Jala pana</i>	<i>Pitta shamana</i>	<i>Amlapitta</i>	Digestion, kidney function
<i>Shaucha, dhanta</i> <i>dhawana and</i> <i>jihva nirlekhana</i>	<i>Tridosha shamana</i>	<i>Mukha malinta,</i> <i>Durgandha,</i> <i>dantha roga,</i> <i>Mukha roga,</i> <i>Alasya,</i> <i>Angamarda</i>	<i>Dantha</i> <i>dhridruta,</i> <i>Mukha shuddhi,</i> <i>Jihva shuddhi,</i> <i>Bhojana</i>
<i>Jala neeti</i>	<i>Kapha shamana</i>	Whiting of hairs, wrinkles, cough	<i>Medha, Smriti</i> Eyesight
Anjana	<i>Akshigata dosha shaman</i>	<i>Timira,</i> Stress on eyes	Clarity of vision
<i>Nasya</i>	<i>Kapha shamana</i> <i>Vatanulomana</i>	<i>Urdhva jatrugata</i> <i>vikara</i>	Eyesight Voice Glow of face
<i>Nasya, Gandusha,</i> <i>Kavala</i>	<i>Kapha shamana</i>	<i>Durganthta,</i> <i>Arochaka,</i> Dryness of mouth, Dryness of lips, <i>Dant roga,</i> <i>Mukha roga</i>	Oral health
<i>Doompana</i>	<i>Urdhvajatrugata</i> <i>Kapha-vata roga</i>	Prevents disease above the clavicle	-
<i>Tambula sevana</i>	<i>Vata shamana</i>	<i>Hrid Roga</i>	Mental health

<i>Abhyanga</i>	<i>Vata shamana</i>	<i>Angamarda, Glani, Sandhi Shool, Anidra</i>	Skin glow and softness, <i>Sarira dadhya</i> , <i>Samhanana</i>
<i>Vyayama/ shankramana</i>	<i>Tridosha shamana</i>	<i>Sandhi vata</i> , Heart disease, obesity	Lightness of body, Digestion, Strength Immunity
<i>Udvardana</i>	<i>Kapha nasaka</i>	Obesity, Compactness of body & skin	Skin compactness
<i>Snana ( Bath )</i>	<i>Tridosha shamana</i>	Skin disease, Prameha, Excessive sweating, Drowsiness Thirst, Burning	Improve digestion <i>Vrisya Aayushya</i> Strengthen energy <i>Utsaha</i> , <i>Bala</i>
Prayer	<i>Mansika dosha shamana</i>	Mental disorders anxiety	Mental health
Breakfast	<i>Pitta shamana</i>	<i>Amla pitta</i>	Agni, Utsaha
<i>Swadhyaya</i>	<i>Tridosha shamana</i>	<i>Bhaya, Glani, avasada</i>	Medha
<i>Sadvritta</i>	<i>Sharirika and mansika dosha shamana</i>	Lifestyle disorders Mental disorders	General health Mental health

### **Descriptive review of Achara rasayana integrating with dinacharya for prevent pandemics**

Acharya Rasayana is mentioned under chapter of Rasayana chikitsa as rejuvenating the attitude which is mention under Charaka Samhita as first and only Samhita that mentioned the Acharya Rasayana. It is important to refine thoughts before changing physical behavior in a person. For that, the study of Acharya Rasayana mentioned in Charaka Samhita is beneficial. There are 27 factors discussed in Acharya rasayana.

Sathyavadi – Be truthful. Being truthful takes away a lot of anxiety and makes us more courageous.

Akrodha – Free from anger. It is beneficial to create an innocent mind and broad thinking. It becomes possible to inquire the truth, thereby naturally

developing spiritual strength in the individual.

Madya maithuna nirvrutha – Avoid alcohol and maintain celibacy. Following Brahmacharya improves quality of mind and health, naturally.

Āhimsa – Avoid violence even mental violence, hating someone or wishing bad luck to someone may backfire on our health.

Anāyasa – Avoid exhaustion, excessive thinking, stress, and worries

Prasanthā – Calm, indulge in creative activities

Priyavadhina – Talking with pleasing words

Japa – Following religious rites. Such as panchaseela, pirth sajjāyana

Shaucha param – Maintain hygiene. Having a clean body begets a clean mind.

Dheera – Stable in thoughts and courageous as well straightforward in action –

Dānanithya – Indulge in works of charity regularly

Thapasvina - Regular practice of penance. Meditation and self-analysis of our mind. It benefits prioritizing thoughts and concentrating on only important things.

Devago brahmana Acharya – Respect god, cow, Brahma, teachers, preceptors, and old people

Nithya ānarshasyapara – Avoid barbaric behaviors

Nithya karuna vedhina - Compassionate

Sama jāgarana swapna – Maintain a regular period of sleeping and awakening

Nithya ksheera ghritha ashina – Regular intake of milk and ghee. Convert easily to Ojas, supporting the physical brain, and enhancing the coordination of mental functions

Deshakalapramana jnana – Possess knowledge of things appropriate to place and time

Yukthi jnana – Possess knowledge of rationality. It helps to judge what is good and bad for us

Anahakretha – Free from ego and having a higher imagination about ourselves

Shastha achara – Good conduction

Asamkeerna – Having a broad mind with really helpful to others

Ādhyathma – Knowledge of spiritualism

Pravanendriya – Proper functioning of sense organs

Upasithara vridhanamāsthikana – Respect seniors

Jethāthmana - Self-control

Dharmashāstraparam vidyanaram – Regular study of scriptures (Baid, A. and Kamath, M. S., 2013); (Sharma. P. V., 1998)

By following Achara Rasayana ingrate with dinacharya, it is possible to prevent diseases as well as the outbreak of diseases and disconnect the illness chain.

### **The importance of incorporating Rithucharya into Dinacharya**

The basic principle followed in Ayurveda medicine is Swasthyashya Swasthya Rakshanam, which means to maintain the health of the healthy individuals, rather than Aturashya Vikara Prashamanancha, which means to cure the diseases of the diseased. For this purpose, the Dinacharya (daily regimen) and Ritucharya (seasonal regimen) have been mentioned in the classics of Ayurveda.

With the change in season, simultaneously human body has changed equally to the environmental ecology. The environment is seen various changes, such as flowering in spring and leaf-shedding in autumn, hibernation of many animals with the coming of winter, and so on. As human being is also part of the same ecology, the body is strictly influenced by the external environment. Many of the exogenous and endogenous rhythms have interacted with and synchronized with each other. If the body is unable to adapt to stressors due to changes in specific traits of seasons, it may cause Dosh Vaishmya, which in turn may render the body highly susceptible to one or other kinds of disorders. This is the main reason for incorporating the Rithucharya into Dinacharya. (Thakkar, et al., 2011)

Table 2 Dietary and routine styles in Ādana kala

<b>Ādana kāla</b>		
<p>The sun and wind are extremely powerful during this season. This provides balmy, parched qualities, and absorbs energy, and strength from plants and humans. It brings an increase in the Tikta (bitter), Kashaya (astringent), and Katu (pungent) Rasa (taste) respectively, which brings about dryness in the body and reduces the Bala (strength).</p>		
<b>Shishira</b>	<b>Vasantha</b>	<b>Greeshma</b>
<p>The weather remains cold and windy during this season. People become lethargic and less energetic. The deposition of kapha dosha occurs in the body and Agni (catabolism) remains in a higher state.</p>	<p>This is the season of origin of new leaves and flowers. Mahabhuta and rasa during this season are kashaya (astringent), and prithvi and vayu bhutha. The strength of an individual remains medium during this season, vitiation of kapha dosha occurs and Agni (digestion power) remains low.</p>	<p>It is an intensely hot season full of unhealthy winds. The water of wells, lakes, and rivers dry up and plants become lifeless. Deposition of Vata Dosha occurs and Kapha Dosha becomes relaxed. Agni of an individual remains in a mild state. Amla (Sour), Lavana, and Katu (pungent) taste and warm food should not be taken.</p>
<b>Dietary style</b>	<b>Dietary style</b>	<b>Dietary style</b>
<p>Food like Amla has preferred wheat/gram flour items, cereals, and pulses, corn is also suggested. Ginger, garlic, pippali (product of piper longum), sugarcane items, milk, and milk products are also incorporated into the eating regimen. Food Having Tikta (bitter), Katu (pungent), kashaya (astringent) dominating are to be kept away. Shita (cool), Laghu (light) foods should also be avoided.</p>	<p>Easily digestible food should be taken in this season. Wheat, rice, old barley, and cereals are suggested. Lentil, Mugda can be taken in pulses. Bitter, katu (pungent), kashaya (astringent) tasting items should be taken. Honey can also be added. Cold, heavy, and viscous food should be avoided.</p>	<p>Food which is light in a process like those having Snigdha (unctuous), Madhura (sweet), sheeta (cool) and Drava (fluid) Guna, for example, lentil and rice should be eaten. Drinking various fluids like cold water, fruit juices, buttermilk, mango juice and a lot of water is advised. Before sleep milk with little sugar should also be taken.</p>
<b>Life Style</b>	<b>Life Style</b>	<b>Life Style</b>
<p>Massage with oil or paste. Shower with tepid water, Exposure to sunlight, and wear warm clothes.</p>	<p>Exercise is very important during this season. Massage with Chandan, Kesara, Agaru, and bathing with tepid water is considered ideal. Anjana (collyrium). Evacuative therapies like Vamana and</p>	<p>Stay at cool places, apply sandalwood paste over the body, decorate the house with blossoms, wear light clothes, and nap during the day are suggested. Too much exercise and hard</p>

	Nasya are recommended. Sleeping during day time should be avoided.	work and alcoholic drinks should be avoided.
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Table 3 Dietary and routine style in Visarga kāla

<b>Visarga kala</b>		
<p>In this period, the wind is not very dry, the moon is more powerful than sun. The earth becomes cool due to the clouds, rain, and cold winds. Unctuousness sets in the atmosphere and Amla (sour), Lavana (salty), Madhura (sweet) Rasa are predominant, so the strength of person enhances during this period.</p>		
Varsha	Sarath	Hemantha
<p>It is the season of rain. The sky is all the time cloudy and rain happen during this season. The wells, lakes, and rivers are again full of water. Rasa and Mahabhuta are Amla (sour), Prithvi and Agni respectively. An individual's strength becomes weak. Agni gets vitiated and variation of Vata Dosha and deposition of Pitta Dosha are prominent.</p>	<p>The sun turns out to be splendid. The sky is clear but sometimes white clouds can be seen. The earth is smeared with wet mud. The transcendent Mahabhutas are Apo and Agni and the prevalent Rasa is Lavana (salty). The appeasement of vitiated Vata Dosha and also the vitiation of Pitta Dosha happens and the movement of Agni increases during this season.</p>	<p>Cool breezes start to blow and feel chilliness. The Rasa which is dominating is Madhura and the Mahabhutas are Prithvi and Apo. An individual's strength and energy stays at the highest level and vitiated Pitta Dosha gets assuaged. The movement of Agni is also increased.</p>
Dietary Routine	Dietary Routine	Dietary Routine
<p>Foods having the taste of Amla (tasty), Lavana (salty) and sneha (unctuous) should be taken. Old barley, wheat, rice, etc. are advised among grains. Soups can also be added to a daily diet. Boiled water is always preferred in this</p>	<p>Foods that have Tikta (sharp) and Madhura (sweet) taste and Laghu (light to process) and food with cold properties should be taken. Green gram, wheat, sugar-sweet, etc. should be incorporated into your eating routine. Hot, sweet, bitter, and astringent</p>	<p>Unctuous, salty, sweaty, tasty foods should be added in the diet. Rice pulses green gram, masha is advised to be taken. Fats, milk and milk products, shidhu (Fragmented preparations), sugarcane items, Tila (Sesame), etc. are to be incorporated into the eating</p>

Life Style	Life Style	Life Style
<p>Massaging with oil and bathing with boiled water are advised during this season. To expel vitiated doshas, medicated basti (enema) is prescribed as an evaluative measure. Exercising, napping during the day, drenching in rain, and hard work are some major things that are advised to be avoided.</p>	<p>It is considered that the moonbeams in the initial 3 hours of the night are very favorable. So one should take water sanitized by the beams of the moon for drinking and bathing. To apply the paste of Chandana is also recommended. Restorative methods like virechana (cleansing), Raktamokshna (phlebotomy), etc. should be done during this season. Excessive eating, napping during the day, and exposure to sunlight should be avoided.</p>	<p>Living in warm places, exercising head and body, massage, Atapa Sevana (Sun Bath), use of warm water, and substantial garments are suggested. Exposure to cold and strong winds and napping during the day should be avoided.</p>

People can obtain a healthy life by following the above-mentioned dietary and behavioral routines. It may be beneficial to reduce the Dosha imbalance during the changes that occur in each season.

### **Enrichment of Dinacharya by Sadvritta in case of pandemics**

“Sad” means good and “Vritta” means conduct or behavior or habits included in our daily regimen. Therefore Sadvritta can be defined as a code of good conduct for mental health and social behavior in individuals. These rules are very important in the prevention of diseases and the promotion of ideal health. These code conducts are classified into five groups.

1. Vyavaharika sadvritta (Ethical codes of conduct)
2. Samajika sadvritta (Social codes of conduct)
3. Manasika sadvritta (Mental codes of conduct)
4. Dharmika sadvritta (Moral codes of conduct)
5. Sharirika Sadvritta (Physical codes of conduct)

Always through the Sadvritta is learned about not only physical and mental but also social well-being, it is very desirable to have a connection with Sadvritta in the Dinacharya. Accordingly, Sadvritta is described as follows.

Vyavaharika Sadvritta includes; speaking the truth, not getting addicted to sensory pleasures, take care of the elderly like fathers, mothers, and teachers. Do not harm anyone, observe self-control, speak pleasant and sweet words, behave according to the time and place where you are residing, and should be devoted to teachers.

Samajika Sadvritta includes; speaking softly and politely with teachers, elders, and intelligent people, do not insult anyone, not having a habit of breaking rules, not coughing and sneezing without proper cover the nose and mouth, and never insulting the brahmins who are superior in modesty, intellect, and age.

Manasika Sadvritta includes; trying to understand the real divine, should not live under continued grief, should always be confident.

Dharmika Sadvritta includes; one should worship gods, cows, Brahmans, elderly people, and teachers, should honor fire, perform religious sacrifices, donate, and offer, should not excrete sputum, fecal, and urine in front of the fire, water, the moon, the sun, and brahmanas, one should not urinate on roads, in crowded places, and while taking food. Sharirika Sadvritta includes; daily Application of oil to the head, ear, nose, and feet, use prayogika dhumpana mention in ritucharya, do not cleaning or entering own finger into the nose, putting nails and hair thrice a fortnight, not eating food without clean hands or maintain hand hygiene, not eat without indulging mentally in food, not eat food that is given by infected people or people who do not maintain hygiene, always wear good clothes, and use fragrance.

The dress should be gentle. Do not indulge in excessive sleep, drinks, and food, should not perform sexual intercourse with a woman having menses or some disease, should not eat without washing hands, feet, and face, with an unclean mouth and without taking bath, without reciting the mantra, and without making an offering to the forefather, should not eat on unclean plates, in an improper place, untimely, and crowded places. (Ankur, T. and Sujata, R., 2020); (Bagde, et al., 2017) Sadvritta is a non-pharmacological preventive approach for a healthy life that mentioned good conduct for positive well-being. The code of conduct mentioned in the Sadvritta increases the sattva guna which increases the potency of the body and mind. Sadvritta increases disease resistance and helps the individual to fight the disease mentally and physically. The main focus of Sadvritta is on the preventive aspect of diseases which is a fulfillment of the primary objective of Ayurveda. Therefore Dinacharya is more effective when it is done in conjugation with Sadvritta.

The effectiveness of daily behavioral routine for pandemics

Emotion directly affects immunity. Therefore mind should be healthy. For the mind to be healthy, the action of a person must also be good. Therefore Ayurveda advocated Dinacharya which controls the threefold (mind, body, and word) of the virtuous. Brahma muhurta jagarana is effective for a person like this. When a person wakes up early in the morning, the oxygen in the atmosphere easily and readily mixes up with hemoglobin to form oxy-hemoglobin, which nourishes the remote tissues rapidly. Exposure to bright light in the early morning causes the release of serotonin, which contributes to feelings of well-being, and happiness and keeps the person active and alert. Early in the morning, there is minimal pollution and the concentration of the mind is enhanced.

Ushnodaka pāna is essential for maintaining urination and gastrointestinal function. Proper energy is developed throughout the body and enhances immunity. Mala tyaga is the evacuation of the waste of digested foods from the rectum. A healthy person should evacuate the natural urges properly. It is beneficial to increase digestive power and prevents various manifestations. Netra prakshalana (washing eyes) prevents the eye diseases such as netrābhishandya, dantadhavana (tooth brushing), jihva nirlekhana (tongue cleaning), sneha gandusha and kavala dharana are most effective to cleanse the mouth and throat. Most effective activities for the manifestation of infections that are transmitted through the mouth. Application of anjana in the eyes, Applying nasya is effective to evacuate waste products and foreign materials from the nasal cavity. As well the olfactory nerve endings are stimulated by Nasya dravyas and send the message to the CNS and initiate normal physiological functions. Use dhumapana. Using dhupana has given more benefits. During



the dhupana, drugs are lightened with fire, and CO<sub>2</sub> has released with smoke. The carbon atom in CO<sub>2</sub> tends to stimulate the respiratory center located in the brain stem which may stimulate the normal physiological function of the respiratory system. Using abhyanga, the massage enhances the overall blood circulation and transports the potency of drugs to the desired part. As well triggers the acupuncture points and induces endorphins secretion. It shows an analgesic effect. The snana is good for strengthening the body and removing impurities from the body. Contagious diseases are subsided by bathing. Following the sandhyopasana contributes to mind relaxation, concentration, and cognition. It will cause to trigger natural immunity. (Kaushik, et al., 2018)

Agnihotra (Homa) therapy is very simple, economic, and extremely effective in bacteriostatic effect. It cleans the atmosphere, boosts the immune system, and heals physical and mental ailments. Research proved that the smell of cow dung kills the bacteria of cholera and Tuberculosis/TB. The fumes of cow's ghee have the potential to lessen the effect of atomic radiation to a great extent. Unpolished whole brown rice should be used because a subtle energy structure is broken in broken rice. From Agnihotra in the atmosphere to detoxify, depollute, and eradicate bacteria and other microorganisms, which are the root cause of illness and disease. (Deogade, 2020)

The person who illness or exposes to an infected community should avoid from Ativyayama (too much exercise), Anashana (fasting for long periods), Alpasana (eating fewer quantities of food), Rooksapāna (intake of alcoholic beverages which cause dryness), Pramitasana (intake of a mixture of good and bad foods), Bhaya (fear), Prajagara (waking up at night), Abhighata (injury), Abhishanga (assault by evil spirits; microorganisms like bacteria, virus, etc.),

Dhatukshaya (depletion of tissues such as by hemorrhage, etc.), Ativisarga (too much of elimination) of Kapha, Sonita (blood), Sukra (semen) and Mala (waste products), Visha (ingestion of poison), etc. (Chauhan, 2002)

## **RESULTS AND DISCUSSION**

The literature review had conducted by using basic textbooks to explore the methods mentioned in Ayurveda for the control of the pandemic. Among the several methods of preventive measures, behavioral routines were the possible solution for preventing the outbreak of the diseases. Especially because dinacharya creates self-control in a person, and disciplined citizens are born in the society. Sadvrita, Ritucharya, Achara Rasayana, etc. also control the behavior of the person and create a good lifestyle. If the behavioral instructions mentioned above can be added to life as dinacharya, it will be a great consolation for a person. Accordingly, Sadvritta, achara rasayanaya, ritucharya, etc. can be used to create proper dinacharya. And it would be a good achievement for the development of immunity.

According to the data, a valuable suggestion and also preventive measure is avoiding pragyaparadha. It is the most effective answer for epidemics. Not only that but also there were individual and environmental level preventive measures. Among the four factors mentioned above kala or rithu is the most active and powerful factor which is effective for people during epidemics or pandemics. Therefore people should follow proper rithucharya to protect themselves from epidemics. Especially in rithusandhi. Panchakarma is another applicable treatment for evacuating vitiated doshas from the internal body. Acharyas have advocated that panchakarma is indicated for healthy persons and non-debilitated persons. During epidemics or pandemics

diseases people can be followed nasya, mruduwirechana-like karmas daily to prevention from diseases and recurrences of diseases. But it should apply at the proper time and proper way to gain good results. Susrutha samhitha has mentioned that social distances (sthana parithyaga) are better for preventing epidemics.

The collected data has discovered the main four points for managing Epidemic diseases. Such as preventive methods, therapeutic methods, dietary regimens, and behavioral routines. As preventive methods dinacharya, rithucharya, achara rasayana, and sadvritta are mentioned under primordial preventive methods in Ayurveda classics.

All of chikithsa karama have manifested enhancing immune power, empowering the Jatharagni, and preventing risk factors that promote the epidemic diseases.

## **CONCLUSION**

Ayurveda has mentioned proper preventive measures than the treatments for the pandemics. It means that Ayurvedic treatments not only help to cure diseases but also help to avoid diseases and achieve uththama ayusha or a long life span. Therefore it always deals with the prevention of diseases. If people follow the proper dinacharya, rithucharya, sadvritta, and achara rasayana they can be achieved a great healthy life throughout their lifetime. Ayurveda mentions a lot of information related to epidemic management. If every individual can follow these primordial preventive measures, people would be able to prevent complication that comes with epidemic diseases. People who follow up the integrated dinacharya pattern will achieve

defined healthy life and good disease resistance.

Suggestion of modified dinacharya for preventing future pandemic issues,

To daily using,

- Wake up early in the morning and breathing fresh air
- Drink warm water
- Brush your teeth, tongue and do kawaladharana, gandushadharana
- Defecation
- Do mind-relaxing exercises like yoga for about 30 minutes
- Eat a balanced diet according to the season. When eating, use non-disturbing environment
- One should act truthfully, disciplinal, non-violently and mindfully throughout the day
- One should clean the body at the end of the day by means of snana
- One should remember religion so as to calm the mind by doing pirith sajjāyanā and doing a bhāwanā
- Take a light diet for the dinner
- Sleep approximately 11.00pm

To do once a month,

Do the virechana karma, herbal dhoomapana, herbal thambula sewana, herbal steam bath, herbal body udwarthana, thaila abhyanga, nasya karma, nethra parisheka and drinking kāyam hodda.

When the disease spreads throughout society, both ill and non-illness persons should be protected by using medicines that are developed the vyadhikshamathwa. Spending lifestyle according to the Ayurveda advice including Acharya darma, dietary procedures, and behavioral patterns ensures achieving a healthy life in any harmful process to human beings.

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