



CRITICAL ANALYSIS ON THE CONCEPT OF JANAPADODHWAMSA - A LITERATURE REVIEW

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ABSTRACT

Introduction: Ecology is the science of mutual relationship between living organism and their environment. Major part of human ecosystem is natural environment in addition to other dimensions of manmade environment. Health has biological, ecological concepts too, where adaptation and adjustment to the environment leads to optimum health. Therefore, the internal and external environment need to be balanced. The constant alteration in environment or ecosystem by activity such as urbanization, industrialization, deforestation land reclamation etc. is creating new health problems and brings changes in human ecology. When humans fails to adapt with the nature, there comes the malpractice that leads to disasters. Large number of deaths in the current era are due to environmental pollution, disasters and communicable diseases. This imparts ill effect on physical and biological environment. Concept of *Janapadodhwamsa* can be understood with respect to environment. Etiology, symptoms as well as remedies for *Janapadodhwamsa* has been explained in Ayurveda. Therefore, there is a need to review the concept of *Janapadodhwamsa* and understand it with respect to current environmental condition. **Method:** Literature review. **Discussion:** The study tries to develop the concept of *Janapadodhwamsa* in relation to natural disaster, epidemic disease and environmental pollution. **Conclusion:** *Janapadodhwamsa* is more relatable to all the natural disasters and communicable diseases, which leads to the destruction of large number of people.

KEYWORDS: *janapadodhwamsa*, Natural disaster, environmental pollution.

INTRODUCTION

In general *Janapadodhwamsa*, destruction of large no number of people is correlated with epidemics alone. *Janapadodhwamsa* is such an important topic that gains significance in the context of environmental pollution as well as natural disasters. Features of *Janapadodhwamsa* are more indicative towards natural disasters.

Ayurveda defines health as a state of equilibrium of *Dosha*, *Dhatu*, *Mala* and *Agni* along with well-being of mind, sense organs and soul and in other hand disease are due to their disequilibrium or abnormal state.^[1] Health is multifactorial, the factors which influence health lies both within the individual and externally in the society in which they live. The health of an individual is always influenced by the environmental changes. Widespread manifestation of diseases occurs due to lack of environmental hygiene.^[2]

Between 2000 and 2019, 79,732 people have lost their lives and 108 crore people were affected in 321 incidences of natural disasters in India in the same

duration, according to the United Nations Office for Disaster Risk Reduction.^[3] According to State of Global Air 2020, long-term exposure to air pollution contributed to around 6.7 million deaths globally in 2019 with 1.6 million in India. The deaths were due to stroke, heart attack, diabetes, lung cancer, chronic lung disease and neonatal diseases.^[4]

The general causes for diseases are *Asatmyendriyarthasamyoga* (Misuse of senses), *Prajnaparadha* (Misuse of intellect) and *Kala/Parinama* (Seasonal Variation).^[5] The diseases are categorised as *Nija* (endogenous) and *Agantuja* (endogenous)^[6], which are comparable to non-communicable and communicable diseases respectively. *Agantuja Vyadhi* can be considered as *Janapadodhwamsa*. *Ayurveda* has mentioned treatment principles for both *Nija* and *Agantuja Vyadhi*. *Janapadodhwamsa* covers the concept of Natural calamities including epidemics and pandemic diseases. Diseases having similar signs and symptoms affecting many people in a particular geographical area along with the destruction of the same and destruction of a geographical area leading to

morbidity in the population are considered as *Janapadodwamsa*.

Literature review

Janapada is community

Udwamsa is destruction

Destruction of complete *Janapada* (community) due to *Maraka* (disease), which becomes the reason for death of huge population, is considered as *Janapadodwamsa*.^[7]

Causative factors are divided into two groups. i.e. *Sadharana Hetu* (common to living being in general) and *Asadharana Hetu* (specific to individual). Four *Janapadodwamsakara Bhavas* are considered as *Sadharana Hetu*, they are *Vayu, Jala, Desha, Kala*. *Asadharana hetu* are those, which leads to the vitiation of *Dosha*.^[8]

In *Sushruta Samhita* concept of *Maraka* has been explained. *Adharma* is said to be the reason for *Vyapanna Rutu* (vitiating season). It leads to vitiation of *Aushadha* (herbs) and *Jala*. Consuming these leads to *Maraka* in humans.^[9]

Janapadodwamsakara Bhava^[10]

Features of Vitiating *Vayu, Jala, Desha* and *Kala* are as follows.

Vayu

Unseasonal features, excessive calm or violent wind, excessive dryness, cold, heat, roughness and humidity, clashes between the wind flowing in different direction, cyclonic in nature, wind with unwholesome smell, wind along with smoke dust and sand particles are considered as the features of vitiating *Vayu*.

Jala

Water with abnormal smell, colour, taste and touch is considered as vitiating. Water will be very unctuous and aquatic animals and birds leave the pond and migrate to some other source.

Desha

Vitiating *Desha* will show abnormality in colour, smell, taste and touch. It will be very sticky and serpents, wild animals, mosquitos, locusts, flies, rats, owls, vultures and jackals will take shelter. Weeds and plants will be grown excessively. Land will have a novel look with withered, dried and destroyed crops. Smoke will be present in the environment. Wild cries of birds and animals will be heard. There will be excessive crying noise as if country is seized by demons.

Kala

Manifestation of the characteristic features contrary to the normal condition of the various season is considered as the vitiation of *Kala*.

Natural disaster^[11]

"A serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceed the ability of the affected community or society to cope using its own resources".

Disaster to be a result of the combination of many factors such as the exposure to hazards, the conditions of vulnerability that are present, and insufficient capacity or measures to reduce or cope with the potential negative consequences. Disaster impacts may include loss of life, injuries, disease and other negative effects on human physical, mental and social well-being, together with damage to property, destruction of assets, loss of services, social and economic disruption and environmental degradation. Causes of disaster has been divided into two, Natural and manmade.

Classification according to Disaster Information Management System of DesInventar 2016 is shown in table no 1.

Table no 1

Geophysical	Hydrological	Meteorological	Climatological	Biological
(a) Earthquake/Mass movement of earth material (b) volcano (c) Tsunami -A series of waves that are generated by a displacement of massive amounts of water through underwater earthquakes, volcanic eruptions or landslides. Tsunami waves travel at very high speed across the ocean but as they begin to reach shallow water, they slow down and the wave grows steeper.	(a) Flood - flash flood (b) Landslides - Avalanche, debris flow, mud flow, rockfall (c) Wave action - Wind generated surface waves of water over oceans, rivers or lakes.	(a) Cyclone, storm surge, tornado, convective storm, extratropical storm, high wind (b) Cold wave, derecho (c) Extreme temperature, fog, frost, freeze, hail, heatwave (d) Lightning, heavy rain (e) Sand-storm, dust-storm (f) Snow, ice, winter storm, blizzard	(a) Drought (b) Extreme hot/cold conditions (c) Forest wildfire (d) Glacial lake outburst (e) Subsidence	(a) Epidemics: viral, bacterial, parasitic, fungal or prion infections (b) Insect infestations

Manmade hazards are Hazards arising from accidents (industrial, road, air, rail, on river or sea, building collapse, fires, mine flooding, oil spills, etc.). Chemical, biological, radiological, and nuclear (CBRN) hazards rank very high among the human-induced risks Terrorist activities and secondary incidents Disaster management consist of 3 steps. i.e. disaster response, disaster preparedness and disaster mitigation.

Epidemic disease^[12]

The occurrence in a community or region of cases of an illness, specific health related behaviour, or other health-related events clearly in excess of normal expectancy.

Pandemic

An epidemic occurring over a very wide area, crossing international boundaries, and usually affecting a large number of people.

Pollution^[13]

Pollution, also called environmental pollution, the addition of any substance (solid, liquid, or gas) or any

form of energy (such as heat, sound, or radioactivity) to the environment at a rate faster than it can be dispersed, diluted, decomposed, recycled, or stored in some harmless form. The major kinds of pollution, usually classified by environment, are air pollution, water pollution, and land pollution. Modern society is also concerned about specific types of pollutants, such as noise pollution, light pollution, and plastic pollution.

Air Pollution^[14]

The direct effect of air pollutants on plants, animals and soil can influence the structure and function of ecosystems, including self-regulation ability, thereby affecting the quality of life.

Adverse effect of air pollution can be classified into two.

1. Health aspects
2. Social and economic aspects

Adverse health effect of Air pollution has been tabulated in the table number 2.

Table no 2

Noxious agent	Sources	Adverse effects
Oxides of nitrogen	Automobile exhaust, gas stoves and heaters, woodburning stoves, kerosene space heaters	Respiratory tract irritation, bronchial hyperactivity, impaired lung defences, bronchiolitis obliterans
Hydrocarbons	Automobile exhaust, cigarette smoke	Lung cancer
Ozone	Automobile exhaust. high altitude aircraft cabins	Cough, substernal discomfort, bronchoconstriction, decreased exercise performance, respiratory tract irritation
Sulphur dioxide	Power plants, Smelters, oil refineries, kerosene space heaters	Exacerbation of asthma and COPD. respiratory tract irritation, hospitalization may be necessary, and death may occur in severe exposure
Lead	Automobile exhaust using leaded gasoline	Impaired neuropsychological I development in children

Water pollution^[15]

Water pollutants can be divided into two. Natural and man made.

Natural water pollutants comprise dissolved gases e.g. nitrogen, carbon dioxide, hydrogen sulphide, etc. Dissolved minerals (e.g. salts of calcium, magnesium, sodium, etc.) Natural constituents of water following its contact with soil; and suspended impurities (e.g., clay, silt, sand and mud) microscopic organisms. These impurities are derived from the atmosphere, catchment area and the soil.

Manmade pollutants are (a) sewage, which contains decomposable organic matter and pathogenic agents (b) industrial and trade wastes, which contain toxic agents ranging from metal salts to complex synthetic organic chemicals (c) agricultural pollutants, which comprise fertilizers and pesticides, and (d) physical pollutants, viz heat (thermal pollution) and radioactive substances.

Biological diseases caused by Polluted water are shown in table no 2.

Viral	Bacterial	Protozoal	Helminthic	Leptospiral
Viral hepatitis A, hepatitis E, poliomyelitis, rotavirus diarrhoea in infants.	Typhoid and paratyphoid fever, bacillary dysentery, Esch. coli diarrhoea, cholera.	Amoebiasis, Giardiasis	Roundworm, Threadworm. Hydatid disease.	Weil's disease

2. Those due to the presence of an aquatic host:

- (a) Snail
- (b) Cyclops

Other health issues are

- (a) Dental health: The presence of fluoride at about 1 mg/litre in drinking water is known to protect against dental caries, but high levels of fluoride cause mottling of the dentalenamel;
- (b) Cyanosis in infant: High nitrate content of water is associated with methaemoglobinaemia. This is a rare occurrence but may occur when surface water from farmland, treated with a fertilizer, gain access to the water supply;
- (c) Cardiovascular diseases: Hardness of water appears to have a beneficial effect against cardiovascular diseases;
- (d) Some diseases are transmitted because of inadequate use of water like shigellosis, trachoma and conjunctivitis, ascariasis, scabies.
- (e) Some diseases are related to the disease carrying insects breeding in or near water, like: malaria, filaria, arboviruses, onchocerciasis, African trypanosomiasis.

DISCUSSION

Natural disasters, pollution, and epidemiology are all associated with the concept of *Janapadodwamsa*. The *Bhavas* will be disrupted in *Janapadodwamsa*, and the same is true in terms of pollution. When the *Janapadodhwamsakara Bhavas* get vitiated, nature becomes unbalanced, resulting in natural disasters. The primary cause for vitiation of these factors is *Adharma*. Deleterious effects of the deed of *Purvajanma* (previous birth) also cause *Janapadodwamsa*. Both these cause *Prajnaparadha*, which will vitiate the external environment and internal *Doshas*. *Prajnaparadha* in *Charakasamhita* is people indulging in unwholesome activities due to ignorance, lack of understanding and loss of memory, and it will vitiate all *Doshas*. It is clear from above that this will again leads to *Adharma* and cause diseases. Sins of the present life and misdeeds of the past life are the root cause of the vitiation of air, water etc. Intellectual blasphemy constitutes the origin of both types of sins.

Janapadodwamsa with respect to disaster

Purvaroopas of *Janapadodwamsa* are abnormalities in *Nakshatra*, *Grahagana*, *Chandra*, *Surya*, *Anila*, *Anala*, and *Disha*. Similarly, catastrophe denotes a bad star or poor star condition.

Properties of *Vikruta Vata* such as *Shikharishikharavamathanam*, *Unmathanam Okahanam*, *Utpidanam Sagaranam*, *Udwartanam Sarasanam*, *Akampanam Bhumehe*, *Adhamanam Ambudanam* are relatable to geophysical, hydrological and meteorological hazards.

Pathogens and hazardous chemical compounds should not be present in portable water. It should have a pleasant taste and be colourless and odourless. Both of these characteristics are in direct opposition to the characteristics discussed by *Vikruta Jala* in the *Charaka Samhita*.

Features of *Vikruta Desha* such as *Bhumikampana* can be considered as earthquake directly. *Satrasarudita*, *Shabdabahula*, *Guhyakacharita* can be related to act of terrorism, quarrelling, crime, breaking rules which are found in this era. Locust attack in the year 2020 across India is an example for this. *Ruksha*, *Dhuma*, *Pamshu*, *Sikata yukta vata* can be considered as Sand and dust storm. *Atisheeta*, *Parusha Vata* can be correlated to winter storm and blizzard.

Management of *Janapadodwamsa*

Bheshaja Sangraha before *Janapadodwamsa* can be considered as disaster preparedness. *Panchakarma Chikitsa* and *Bheshaja Chikitsa* is nothing but disaster response. *Sadvritta Palana*, *Daiva Vyapashraya Chikitsa*, *Rasayana Prayoga* can be considered as disaster mitigation. According to *Charaka Samhita*, one is supposed to treat who approaches him and whom he wants to treat. Similar concept exist in disaster management known as triage. In this injured person will be graded with 4 colours based on the severity. Those who have high chances of survival will be considered for the treatment when there is lack of enough facilities. When a disaster occurs people will be rescued and moved to a safe place in the similar way *Sthana Parityaga* is explained in *Janapadodwamsa* management.

Janapadodwamsa and epidemic disease

It is evident that disaster leads to epidemiological conditions. Pollution as well as disasters create a platform for the epidemiological disease to occur. Overcrowding and poor sanitation in temporary resettlements. Population displacement may lead to introduction of communicable diseases. Disruption and the contamination of water supply, damage to sewerage system and power systems. Here comes the involvement of vitiated *Vayu*, *Jala* and *Desha*. Disruption of routine

control programmes. Ecological changes may favour breeding of vectors and increase the vector population density. Displacement of domestic and wild animals leads to zoonotic diseases.

Pandemic of the year COVID-19 is generally correlated to *Janapadodwamsa*. Distraction of large no of people has occurred. Rather than Desha and Vayu, Kala is the one which is responsible for the COVID-19 pandemic.

Janapadodwamsa and environmental pollution

Pollution makes the area unfit to the people to live. It gives rise to so many abnormalities in health conditions. All residents of the community are susceptible to diseases caused by pollution. In the instance of pollution, the *Janapadodwamsakara bhava* will be present. Air pollution will have an adverse influence on both human life and the ecosystem. A contaminated water source causes disease in the entire population at once, making it unsafe for aquatic species to live in.

CONCLUSION

Main cause for *Janapadodwamsa* is *Prajnaparadha*. *Prajnaparadha* makes the person victim of *Asatkarmaphala*. This further leads to *Adharma* and ends up in the vitiation of *Janapadodwamsakara Bhava*. When the people as well as the one who rules them adopts *Adharma* it leads to *Janapadodwamsa*. Current day corruptions, illegal and anti social activities, in the level common people as well as administration can be correlated to it. In the similar way contribution of man in environmental pollution as well as disaster are more. Even though it is considered that natural disaster occur due to unfavorable placement of planets, manmade hazards acts as catalyst for a natural disaster to occur. Human has lost the rhythm with nature. Increased fuel burning, industries, automobiles, instruments which produce harmful substances to nature will lead to green house effect which in turn ends up in global warming. This condition give rise to many climatic and meteorological hazards such as Heat strokes, draughts etc. Deforestation, land acquisition, makes the disaster even more intense. There exists a relation between pollution, disaster and epidemiological disease, which are consolidated in the heading of *Janapadodwamsa* under the Ayurveda classics.

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