



Environmental Hygiene –An Ayurvedic Perspective

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Abstract

Health is multifactorial, the factors which influence health lies both within the individual and externally in the society in which he or she gives it is a truism to say that what man is and to what diseases he may fall victim depends on a combination of two sets of factors – his genetic factors and the environmental factors to which he is exposed. The health of an individual's residing place is always influenced by the environmental changes. Widespread manifestation of diseases occurs due to lack of environmental hygiene.in Ayurveda there is description of both internal and external environment, external environment like *Jala*, *Vayu*, *Bhumi* and *Kala* has been explained in relation to health and disease. In this article a systematic review has been done regarding *Janapadodhwamsa* and its prevention and treatment, Air pollution causes and its prevention, soil description and *kala* (time factor). The purification methods mentioned in Ayurveda for water, air and soil are may be crude and useful in domestic level in rural area still they have scientific basis , these can be propagated through mass media to reach even in urban area.

Key words: Environment, Hygiene, *Janapadodhwamsa*, *Jala*, *Vayu*, *Desa*, *Kala*

Introduction

According to ecologists the health is defines as dynamic equilibrium between man and his environment and disease a maladjustment of the human organisms to environment. Dubos defined health saying – health implies the relative absence of pain and discomfort and a continuous adaptation and adjustment to the environment to ensure optimum function. The ecological concept raises two issues that is imperfect man and imperfect environment. History argues strongly that improvement in human adaptation to natural environment can lead to longer life expectancies and better quality of life – even in the absence of modern health deliverieservices¹. Hippocrates who was the first related disease to environment e.g. climate, water, air etc.. . It is an established fact that environment has a direct impact on the physical, mental and social well-being of those living in it. The environmental factors range from housing, water supply, psychosocial stress and family structure through social and economic support systems, to the organization of health and social welfare services in the community. The environmental components are not water –tight compartments. They are so inextricably linked with one another that it is realistic and fruitful to view the human environment in toto when we consider the influence of the environment on the health status of the population. If the environment isfavorable to the individual, he can make full use of his physical and mental capabilities. Protection and promotion of family and environmental health is one of the major issues in the world today². The health of an individual'sresiding place is always influenced by the environmental changes. Widespread manifestation of diseases occurs due to lack of environmental hygiene. The natural characteristics of the

environment must be protected from vitiation. People get diseases when the causative factors of diseases in the environment become plenty and the immunity becomes suppressed. Vitiating of the nature leads to simultaneous manifestation of diseases and affects the health status of individuals and community. The most common factors dealt with are air, water, place of living and season. Different seasons are also adversely affected by environmental pollution. Carelessness in maintaining the environmental hygiene is responsible for epidemics. In this article a systematic approach to environmental factors described in Ayurveda has been done to get awareness and propagate the hidden facts about environmental hygiene.

Janapadodhwamsa

Natural calamities including epidemics and pandemic diseases are described in Ayurveda under the heading of *Janapadodhwamsa*. Such diseases having similar signs and symptoms affecting many people of a town or state at a time can destroy the whole town, so they are called *Janapadodhwamsa*. According to *Charaka*, these are caused by the vitiation of environmental factors like air, water, place and climate. War and other man made calamities are also causative factors for *Janapadodhwamsa*. Chakrapani the commentator of *Charaka samhita* says- there are two kind of causes for diseases, *sadharana* (typical) and *asadharana* (atypical). Atypical is subjective cause that varies from individual to individual like food, habits etc. which vitiates *dosha*. Typical is common to many people like air, water etc.. . Diseases due to such common causes are called *Janapadodhwamsa*.³

The primary cause for vitiation of these factors is *Adharma*. Deleterious effects of the deed of *poorvajanma* (previous birth) also cause *janapadodhwamsa*. 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 is called 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 sins⁴.

Characteristics of polluted Air - Air with following characteristics is injurious to health – excessive calmness or violent blows, excessive dryness, cold, hot air, roughness, or humidity, excessive clashes among each other, excessive cyclonic in nature and association with unwholesome smell, sand, ashes, and smoke⁵.

Water having following characteristic is considered to cause diseases – devoid of its normal smell, color, taste and touch, *kleda* – excessive stickiness, absence of aquatic birds, reduction in number of aquatic animals and unpleasantness⁶.

Land having following characteristics is considered to be harmful- abnormal color, smell, and touch, excessive stickiness, abundance of serpents, wild animals, mosquitoes, locusts, flies, rats, owls, vulture and jackal. Having excess of grass and weeds, abundance of excessively branched creepers, having a novel look withered dried abundance of smoke in the wind, presence of wild cries of birds and dogs, bewilderment and pain in animals and birds⁷.

Time having following characteristics is considered to be harmful- perversion or absence of religion, truth, modesty, manners, conducts and other qualities of the inhabitants of the land. Constant agitation and overflow of water reservoirs, frequent occurrence of meteorites, thunderbolts and earth quakes, fierce look and cries in the nature, appearance of roughness and coppery, red and white colored sun, moon, and stars, their appearance as if they are covered with a net of clouds. Confusion, excitement, apprehension, lamentation and darkness and darkness in the atmosphere and presence of excessive crying noise as if the country is seized by demons. Manifestation of these characteristic features contrary to the normal conditions of the various seasons is considered to be harmful⁸.

The above mentioned four factors along with their respective features of vitiation are considered by the wise to be responsible for the destruction by epidemic diseases. When these factors are having qualities opposite to above, they are useful for human beings⁹.

Importance of treatment: during the impairment of the factors, if proper medicine is administered, one need not be afraid of diseases¹⁰.

Impairment of *Vata*, *Jala*, *Desa* & *kala* are more lethal in their increasing order. That means impairment of *Kala* is most dangerous. Specialist should know that, it is easier to correct the vitiation of air, water and land, than those of *kala*¹¹.

Line of treatment of epidemic diseases:

Panchakarma – *Panchakarma* is the best treatment for vitiation of four factors

Rasayana therapy – proper *Rasayana* therapy done with medicines that are collected before onset of epidemic diseases restores physical health.

Truthfulness, *Bhootha daya* – compassion for living being, *Dana*- donation, charity, *Bali*- sacrifices, *devatarchana* – prayers to the Gods, *Sadvrutta* – good conducts, adoption of preventive measures, tranquility, protection of self by *Mantra* etc.. are very effective, devotion towards God, residence in auspicious localities, observance of *Brahmacharya*, service to those observing *Brahmacharya* is told as remedy¹².

Purification of Water: *Acharya Susruta* has described methods of purification for contaminated water as follows- boiling over fire, heating by exposing to sunrays, immersing heated iron balls, sand, or stone into water and he also further mentioned procedures to remove bad smell and to impart good smell as putting flowers such as *naga*, *campaka*, *utpala*, *patala* etc.. into water.¹³ Drinking water should be stored in vessels made of gold, silver, copper, bronze, precious stones or in earthen pots and made fragrant by putting flowers into it should be used for drinking.¹⁴

Procedure: *Kataka* is to be cut in two pieces and the cut surface is rubbed on the inner surface of a vessel before pouring it with water. Then water is poured in it. That causes the impurities in water to get settled down at the bottom of the vessel³⁶ *Gomedaka* should be immersed in impure water, *bisagrathi* is also immersed in impure water, *shaivala moola* is either dried, powdered and sprinkled or immersed, *vastra* is used as filter – through multiple folds of a cloth water is allowed to pass; it helps in removing the dissolved solid impurities which are trapped in the cloth³⁷ *muktai* immersed, *mani* is stirred in water.

Surya tapa : In this method water is exposed to direct sun light. It is a type of indirect heat induction method³⁸

Hamsodaka : Water which gets heated by the hot rays of the sun during day time and gets cooled by cool rays of the moon during night, for many days continuously, which has been detoxicated by the rise of the star *Agasthya* which is pure, uncontaminated and capable of mitigating the *doshas* is known as *Hamsodaka*. It is neither *abhishyandi* nor dry and is considered as equal to *Amrutha*³⁹ (Metals: Copper is well known for its anti-microbial activity. To get purified water, it should be stored in copper vessels (Health popular Nutritional. march30(1): 17-21, pmc3312355)

In *Ashtanga Sangraha*, there is one recipe mentioned for water purification - by adding *bhasma* prepared by burning drugs like *patala*, *paribhadra*, *aswakarna*, *samyaka* and *sindhuvara* which may remove the harmful bacteria and other microorganisms from water⁴⁰

Methods of clearing the water: Turbidity of water can be removed by adding the paste of *kataka*, *gomedaka* (gem / dolomite, Zircon, alexandrite), *bisagrathi* (rhizome of lotus), *saivala mula* (root of algae/ *Cetratophyllum demersum*) – these are immersed in water, *vastra* (cloth, filtering through it), *mukta* (pearl), and *mani* (crystals of rocks) or gems (by immersing in water)¹⁵

Water stands : different kinds of equipments to keep vessels are wooden planks, tripod stand with eight steps, rings of *munja* grass, water shed (chamber / room built with cane or bamboo reads in open space) and pot hangers¹⁶.

Methods of keeping water cool – there are seven methods mentioned to keep water cool they are – exposing to breeze, keeping pots of cold water one over the other, wrapping the pots with cloth and sprinkling water frequently, stirring with sticks, fanning, lifting through cloth (dipping clean cloth in water and lifting, repeating this act frequently), keeping the water pot hidden in a sand bed and keeping the pot in hanger¹⁷

Ideal Qualities of potable water : water which has no smell , no prominent taste , quenches thirst , clean , cold (cool), light (easy for digestion) and pleasing to the mind is said to be best in qualities (suitable for drinking)¹⁸, all kinds of ground water should be collected in the early morning because at that time , it will be free of pollution and more cold.¹⁹

Tests for purity of water:

Saalyodana(cooked rice) kept soaked in *Samudrajala*, (seawater) water changes color, becomes sticky and slimy then water is impure²⁰

Samudra(sea) water also has qualities of *gangambu*, during the month of *asvija*²¹

Samudra(sea) water has got bad smell and excess of salt in it, which vitiates all *doshas*²²

Air Purification (Vayu sudhi)

Fumes of following herbs – ficus laccur (*laksha*), turmeric (*haridra*), aconitum heterophyllum (*ativisha*), terminalia chebula (*haritaki*), cyperus rotundus (*musta*), eletteria cardamom (*ela*), cinnammomum tamala (*valka*), saussuria lappa (*kushta*) and *priyangu*²³

Havana (sacrifice to purify the air): cinnammomum karpura (*karpura*), cedrus deodara (*devadaru*), santalam indicum (*candana*), *sariva*, *srivasa*, shorea robusta (*sarja*), aquillaria agallocha (*agaru*), azadiracta indica (*nimba*), psoralia cordilifolia (*somaraji*), sulpher (*gandhaka*) and commifera mukul (*guggulu*) (Swasthavritta samuchayam)²⁴

Effects of poisonous air: air which is polluted with smoke and poison makes the birds tired and they fall over the earth. It also produces diseases like rhinitis, headache, acute eye diseases²⁵

Effects of wind according to direction²⁶: Eastern winds are sweet, unctuous, salty, and heavy, causes burning sensation and aggravates *rakta pitta*. It is unwholesome for patients especially suffering from *vrana*, as it increases moisture (*kleda*), poisoning and injury. It is *kaphakara* and aggravates all diseases.

Southern winds are sweet, astringent, not causing burning sensation and light. It is condusive to eyes , enhances strength, *rakta pitta hara* and does not aggravates *vata*

Western winds are fast, dry, rough, reduce strength, unctuousness, *kapha* , *medas* and causes emaciation and take away the strength immediately .

Northern wind is unctuous, soft, sweet, astringent, cold, does not vitiate *doshas* ,so only enhances strength , *kleda* , good for person suffering from emaciation , *kshaya* and poison.

According to ancient science wind is responsible for seasonal changes, climate, movement of celestial bodies, germination etc.. i.e. Maintenance of the universe, Changes in composition and speed will lead to different hazards. Poisonous air can be related to air pollution and the diseases mentioned according to modern and in Ayurveda are similar²⁷:

Ayurveda description	Modern description
Cough	Acute Bronchitis
Dyspnoea	Chronic lung disease
Vomiting	Acute respiratory infections in children
Rhinitis	Lung cancer , Bronchial asthma
Fever	Respiratory allergy, pneumonia
Headache	Emphysema
Acute eye disease	Adverse effects of pregnancy
Unconsciousness	Cough, substantial discomfort

Landdescription:

Land fit for construction of houses²⁸: Land with smell of curd, ghee, honey, oil, blood, cow & lotus & white, red, yellow and black color, sounds of elephants and horses and having six *rasas*, single colored, devoid of stones, saw dust etc.... Spines, bones, crevices and elevated in south eastern direction are the ideal land for construction of houses.

Land unfit for construction of houses²⁹: Land having smell of dead body, fish and birds is not good, Land near Holy tree, King's palace, public halls, temple and spiny plants. Land which is round, triangular, irregular, very hard like diamond, elevated like tortoise, situated near house of Chandala, shadowed and leather processing unit nearby it are unfit.

Room for parturient mother³⁰: Land having white, red, yellow and black color should be used for *brahmana*, *kshatriya*, *vaisya* and *sudra*, wood of *bilva*, *vata*, *tinduka* and *bhallataka* should be used respectively. Walls should be plastered with white color. All the things should be placed in an organized way. Door should be in eastern or southern direction. Labor room should have 8 *hasta* length, 4 *hastabreadth*. All auspicious things should be kept in it.

Room for children³¹: An expert architect should build ideal, beautiful and strong room for children devoid of darkness, hard winds, where animals like dog, fox, cruel animals, rats, spider etc., insects are not present. It should be constructed separately and place for storing water, urination, defecation, taking bath and cooking should be provided. House should be so that it is comfortable in all seasons and bed should be made according to seasons equipped with chairs, beds, toys etc.. Measures for protection of child should be taken by performing protective measures like sacrifice, oblation, etc.... Place should be kept clean and elders, doctors, persons who take care of children should be present.

Housing³²: It should be built, so that breadth wise it is in east and west direction, length wise it should be in north and south direction. Direct entry of sun rays is not good for health. Above the foundation, there is an elevation meant for protection, beautifying, elevating the building called *upapithai*. e platform. *bhitti* or walls – should be strong, devoid of crevices, *gruha vitana* or roof should be two types *samanta* – uniform and *nimnana* – sloping, the roof should be so that the rain water drain easily and does not leak.

Kitchen³³: Latrines and bathrooms should not be near kitchen, smoke should not spread inside the house, and holes should be made in the roof of kitchen for the escape of smoke. Half should be covered with impermeable material like cement. Stoves should be kept in east west direction (breadth wise) (Kshema Kutuhala)

Other rooms³⁴: Other rooms for bathing, cooking, sleeping, eating, storing grains, room for goods, churning, preparing ghee, studying, keeping medicines etc.. should be built accordingly. (Gruha bhushana)

Purification of land³⁵: Cleaning (sweeping(*marjanam*)) burning(*dahana*), by standing(*kalat*), gazing of cows (*go kramanath*), sprinkling of water(*sekath*) (disinfectant) scraping(*ullekhana*) and covering(*alepanam*) land can be purified. house can be purified by wiping, washing and white washing (*marjanam* and *lepanam*)

Discussion

The Health of the individual is dependent on both hereditary and environmental factors. Health is a condition in which all the physical and mental mechanisms of an individual function normally. Health is not just something which we inherit; it has to be attained by observing the laws of nature. Health requires continuous adjustment to the environment as living organisms are dependent upon the environment, in which they live. Environment includes the conditions, circumstances and surroundings which affect the development and growth of an organism or the cells within. A specific area of living plants and organisms and their environment forms an ecosystem. Today's environment is partially natural and partially man-made. It includes biological, ecological, physical, social and economic factors. Biological factors includes

all unicellular and multi cellular organisms and plant life. Physical factors include air, light, sound, noise, water, climate, food etc... , social factors include education, rituals, customs, beliefs, and faith and inter-personal relations. Economic factors include the means of livelihood, building material, clothes, fuel and mechanical devices used by the man. To lead a healthy life and purposeful life the individual must learn to cope with his overall environment. If an individual can attain this level of adjustment, he masters the art of living. Environmental hygiene means the healthful environment of man, it deals with mainly external environment like water, air, land etc.. In Ayurveda the environmental factors can find internal environment factors like *doshas, dhatus, malas* , *srotases* and *prakriti* . External factors like *Jala, desa, Vayu, kala(Ritu)* which have the effect over the human body.,The health of the individual depends upon the balanced state of *doshas, dhatus* and *malas* , these factors again depends upon the harmonious state of *Jala, Desa, Vayu* and *Kala* . The description of water and its purification methods mentioned in Ayurveda are more or less similar to Modern methods but Ayurveda methods are useful in small scale purification which widely practiced in some parts of rural India even now, they can be propagated wherever people are not accessible to drinking water facilities especially boiling, filtering , adding *Kataka*, storing water in copper vessel and Herbs such as *Tulasi* (*Oscimum sanctum*), *Jeera* (*Cuminum cyminum*) and *Ushira* (*Vetivaria zizanoides*) are added to drinking water to enhance their physiological property as a local health tradition especially in South Indian states . few studies on water purification by Ayurvedic methods are useful in reducing the specific microorganism count and physical purification (An invitro study on anti- microbial action of patadi bhasma in water purification , Arita viswa vidya peetham , 2016 and K.P.Skandan et all Ayu, 2001 oct-dec, 37(3), storing drinking water in copper pots kills contaminating diarrhoeagenic bacteria(V.P.Preeti Sudha et all Journal of Health, Population and Nutrition, 2012 March). The purification of air occupied in a room or in a closed veranda has been tried and got significant results and few studies also indicates like performing yagjna has a purifying air in surrounding area and also disinfecting Operation theatres by using herbal fumigation going on .in ancient India the description of Land, housing and purification methods of land have the relevance in modern era , the construction of Maternal home and Neonatal homes principles gives idea to construct them on aseptic measurements.

Conclusion

The key to man's health lies largely in his environment. In fact much of man's ill-health can be traced to adverse environmental factors such as water pollution, air pollution, soil pollution, poor housing conditions etc., pose a constant threat to man's health. Often the man is responsible his environment through urbanization, industrialization and other human activities. the modern science developed a sophisticated technology to tackle the problems of environmental problems . Ayurveda also described the causative factors responsible for environmental pollution especially recognized human error like *Adharma* and *Prajnaparadha* as a root cause and also prescribed purification methods which can be used in domestic level and in small communities, there is need to conduct more research to prove scientifically and in a large scale manner by involving services of public health engineer, the town planner, the sociologist, the economist, and health inspector. The purpose of environmental hygiene is to create and maintain ecological conditions that will promote health and thus prevent the diseases .The concepts of Ayurvedic environmental hygiene can be propagated through mass media to educate the people to adopt possible measures for prevention of health hazards of environmental pollution as a way of life. .

References

1. Park K., Preventive and Social Medicine, 24 th edition, Banaridas Bhanot , jabal pur, 2017, chapter 2, page no 14

2. Park K., Preventive and Social Medicine, 24 th edition, Banaridas Bhanot , jabal pur, 2017, chapter 2, page no 19
3. Sharma KR, Dash Bhagavan, Agnivesha's Caraka samhita , Voll.II, Chowkhamba Sanskrit series office, Varanasi, 2008, 3:6,P.142
4. Sharma KR, Dash Bhagavan, Agnivesha's Caraka samhita , Voll.II, Chowkhamba Sanskrit series office, Varanasi, 2008, 3:20,P.147
5. Sharma KR, Dash Bhagavan, Agnivesha's Caraka samhita , Voll.II, Chowkhamba Sanskrit series office, Varanasi, 2008, 3:7,P.143
6. Sharma KR, Dash Bhagavan, Agnivesha's Caraka samhita , Voll.II, Chowkhamba Sanskrit series office, Varanasi, 2008, 3:8,P.143
7. Sharma KR, Dash Bhagavan, Agnivesha's Caraka samhita , Voll.II, Chowkhamba Sanskrit series office, Varanasi, 2008, 3:8,P.144
8. Sharma KR, Dash Bhagavan, Agnivesha's Caraka samhita , Voll.II, Chowkhamba Sanskrit series office, Varanasi, 2008, 3:8,P.144
9. Sharma KR, Dash Bhagavan, Agnivesha's Caraka samhita , Voll.II, Chowkhamba Sanskrit series office, Varanasi, 2008, 3:8,P.144
10. Sharma KR, Dash Bhagavan, Agnivesha's Caraka samhita , Voll.II, Chowkhamba Sanskrit series office, Varanasi, 2008, 3:8,P.144
11. Sharma KR, Dash Bhagavan, Agnivesha's Caraka samhita , Voll.II, Chowkhamba Sanskrit series office, Varanasi, 2008, 3:10,P.145
12. Sharma KR, Dash Bhagavan, Agnivesha's Caraka samhita , Voll.II, Chowkhamba Sanskrit series office, Varanasi, 2008, 3:12-18,P.146
13. Murthy Krs , Susruta Samhita Vol I Sutrasthana,Chaukhamba Orientalia , Varanasi,Reprint Edition 2012, 45:12 Page No 326-328
14. Murthy Krs , Susruta Samhita Vol I Sutrasthana,Chaukhamba Orientalia , Varanasi,Reprint Edition 2012,45:13 Page No 326-328
15. Murthy Krs , Susruta Samhita Vol I Sutrasthana,Chaukhamba Orientalia , Varanasi,Reprint Edition 2012,45:17 Page No 326-328
16. Murthy Krs , Susruta Samhita Vol I Sutrasthana,Chaukhamba Orientalia , Varanasi,Reprint Edition 2012,45:18 Page No 326-328
17. Murthy Krs , Susruta Samhita Vol I Sutrasthana,Chaukhamba Orientalia , Varanasi,Reprint Edition 2012,45:19 Page No 326-328
18. Murthy Krs , Susruta Samhita Vol I Sutrasthana,Chaukhamba Orientalia , Varanasi,Reprint Edition 2012,45:20 Page No 326-328
19. Murthy Krs , Susruta Samhita Vol I Sutrasthana,Chaukhamba Orientalia , Varanasi,Reprint Edition 2012,45:20 Page No 326-328
20. Murthy Krs , Susruta Samhita Vol I Sutrasthana,Chaukhamba Orientalia , Varanasi,Reprint Edition 2012,45:7 Page No 326-328
21. Murthy KRS , Susruta samhita Vol I sutrasthana,Chaukhamba Orientalia , Varanasi,Reprint Edition 2012,45:7 Page No 326-328
22. Murthy KRS, Susruta samhita Vol I sutrasthana,Chaukhamba Orientalia , Varanasi,Reprint Edition 2012,45:7 Page No 326-328
23. Murthy KRS , Susruta samhita Vol II Kalpasthana,Chaukhamba Orientalia , Varanasi,Reprint Edition 2012,3/17 Page No 431
24. Rajeswara Datta sasthry , Swasthavritta samuchayam, page no. 272

25. Murthy KRS , Susruta samhita Vol II Kalpasthana,Chaukhamba Orientalia , Varanasi,Reprint Edition 2012,3/16 Page No 431
26. Murthy KRS , Susruta samhita Vol I sutrasthana,chaukhamba orientalia , varanasi,reprint edition 2012,20/23-29 page no 150
27. Murthy KRS, Susruta samhita Vol II Kalpa sthana ,chaukhamba orientalia , varanasi,reprint edition 2012,3/17 page no 431
28. Misra Satyendra, sri Narayana Daivajna; Muhurta martanda ,Chaukhamba Krishna Dasa Acedemy, Varanasi,3rd chapter Page.213
29. Misra Satyendra, sri Narayana Daivajna; Muhurta martanda ,Chaukhamba Krishna Dasa Acedemy, Varanasi, 3rd chapter Page.213
30. Murthy Krs, Susruta Samhita Vol I. Chaukhamba Orientalia, Varanasi,Reprint Edition 2012,Sareera Sthana 10/5 Page No 154
31. Sharma Rk, Dash Bhabavan, Craraka Samhitha , Voll.Ii, Reprint 2008, Chaukhamba Sanskrit Series, Varanasi, Sarrera Sthana 8/4
32. Www.Kshema Kutuhala
33. Www.Kshema Kutuhala
34. Www.Gruha Bhushana
35. Www.Yagnya Valka .
36. Bhava Misra , Bhavaprakasha Nighantu, With The Commentary Of Krishna Chandra Chunekar , Edited By Gangassahay Panday , Varanasi , Chaukhamba Sanskrit Samsthan, Amradi Phala Varga , Kataka- Commentary , Page No 573
37. Vridha Vagbhata , Ashtanga Sangraha , With Sasilekha Vyakhya Of Indu , Edited By Shivaprasada Sharma , Reprint 2012, Varanasi , Chaukhamba Sanskrit Samsthana , Soothra Sthana 6/9 Page No. 37
38. Vriddha Vagbhata , As, With Sasilekha Vyakhya Of Indu , Edited By Shivaprasada Sharma , Ed Reprint 2012, Varanasi , Chaukhamba Sanskrit Samsthana , Soothra Sthana 6/9 Page No. 37)
39. Vagbhata , Ah With Sarvanga Sundari Commentary Of Arunadatta , Collected By Anna Moreswar Kunte, Krishna Ramachandra Sastry Narve, Edited By Harisastry Paradkar Vaidya , Ed. Reprint 1998, Varanasi, Chaukhamba , Soothra Sthana 3.51-53, Page No.49
40. Murthy Kr, Ashtanga Sangraha Of Vagbhata, Vol.I,Chaukhamba Orientalia, Varanasi, 2005,Sutra Stahana 8/48: Page No:181