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Environmental Determinants In Ayurvedic Etiology: A Review Of Dosha Imbalance And Pollution Exposure

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Abstract
Ayurveda classifies disease as an expression of doshic imbalance caused by internal or external causes. Among external causes (agantuja nidana), environmental pollutants have been the dominant cause of contemporary disease patterns. This research synthesizes the etiological contribution of pollution in disturbing doshic equilibrium through a narrative synthesis method. Data were obtained from ancient Ayurvedic literatures–Charaka Samhita, Sushruta Samhita, Ashtanga Hridaya and contemporary scientific databases such as PubMed, Scopus, and Web of Science. Major pollutants studied are particulate matter, heavy metals, pesticides, nitrates, and electromagnetic radiation. Findings indicate that air and noise pollution exacerbate Vata dosha, waterborne toxins raise Pitta, and soil contaminants enhance Kapha and Ama formation. Sources of noise and electromagnetic field (EMF) show significant disruption of Majja dhatu and Manovaha srotas, to present with anxiety and insomnia. The results strengthen Ayurvedic concepts of Nidana Panchaka, prakriti-based predisposition, and Agni dysfunction. Convergence of Ayurvedic diagnostics with environmental health concepts provides a personal and preventive approach to tackle disorders caused by pollution. The investigation validates the applicability of Ayurvedic preventive measures–dinacharya, ritucharya, panchakarma, and rasayana–in modern toxicological practice.

Keywords: *dosha imbalance, agantuja nidana, prakriti, pollution, environmental Ayurveda.*

INTRODUCTION

Ayurveda, the traditional Indian medicine system, is based on the principle of sustaining balance between three forces of nature called doshas mainly Vata, Pitta, and Kapha. The doshas govern physiological, psychological, and pathological processes in the human system and are manifestations of the five elements (Pancha Mahabhutas)–ether, air, fire, water, and earth (Tubaki & Prasad, 2022; Li et al., 2022). The well-being of the individual is thought to be sustained through the dynamic equilibrium of these doshas according to their prakriti and interactions with the environment (Arnold, 2023). Ayurvedic disease occurs when dosha balance gets deranged by internal or external causes, a process consolidated in the classical etiological model of Nidana Panchaka, which comprises Nidana (etiologic factors), Purvarupa (prodromal symptoms), Rupa (symptoms), Upashaya (palliative treatments), and Samprapti (pathogenesis). Of these, Nidana is the basis of pathological knowledge with emphasis on diet, behavior, seasonality, and environmental exposures as leading disease determinants (Dinesh et al., 2022). Ayurveda identified environmental factors like air quality, water supply, and seasonality as possible doshic disruptors well before these were formulated in contemporary epidemiological models.

Even with this advanced model, Ayurvedic scholarship has not yet fully incorporated modern environmental toxins like particulate matter, heavy metals, pesticides, and endocrine-disrupting chemicals into its theory of dosha imbalance. Even though recent studies have shown strong associations between environmental toxins and systemic inflammation, oxidative stress, and metabolic disorders (Landrigan et al., 2017; Prüss-Ustün et al., 2017). Few have tried to cast these outcomes onto Ayurvedic pathophysiological paradigms. While environmental health science has come far in measuring risks of exposure and their biological impacts, such findings are still largely insulated from conventional medical paradigms. In the same vein, Ayurvedic literature does recognize "agantuja nidana" (external causative factors), but infrequently map them into contemporary types of pollution or synthetic exposure (Nedungadi et al., 2023). There is therefore a distinct need for a learned synthesis that places environmental pollution within Ayurvedic etiopathology.

Conjoining Ayurvedic and environmental health insights is crucial to an enhanced holistic conceptualization of disease etiology in the 21st century. Ayurvedic theory offers a sophisticated ontological foundation for understanding how environmental exposures impact the body-mind complex, especially when individualized according to one's prakriti type (Chinthala et al., 2023). This intersectional framework not only aids Ayurvedic rejuvenation in public health policy but also facilitates precision health interventions in environments with pollution, particularly in the fast-developing areas of South Asia. In addition, the identification of environmental determinants as nidana provides a fresh dimension for preventive health interventions like dinacharya (daily regimen), ritucharya (seasonal regimen), and panchakarma therapies according to pollution-caused imbalances. An integration of traditional Ayurvedic wisdom with contemporary toxicological information can then enhance theoretical knowledge and clinical practices in integrative medicine (Li et al., 2022; Abraham, 2024).

Objectives

This research considers how environmental pollutants are acting as external etiological factors disturbing doshic balance and causing disease. It seeks to categorize contemporary pollutants like air, water, soil, chemical, and noise, according to their effect on Vata, Pitta, and Kapha. It also translates toxicological information using Ayurvedic pathology in order to determine associations with doshic symptoms and disease development. Individual constitutional susceptibility has also been considered in this study.

METHODOLOGY

The research utilizes a narrative review approach to integrate interdisciplinary data from ancient Ayurvedic scriptures and contemporary literature on environmental health. The aim is to study the etiological potential of environmental pollution in creating doshic imbalances, merging classic concepts with current toxicological data.

Data Sources

Major Ayurvedic sources were Charaka Samhita, Sushruta Samhita, and Ashtanga Hridaya, which were examined through English translations endorsed by institutional councils of Ayurveda and publishing scholars. These works gave us background information on Nidana Panchaka, susceptibility based on prakriti, and internal versus external causative factors classification. To supplement this classic basis, a systematic literature search was also performed in contemporary scientific databases like PubMed, Scopus, and Web of Science. Used keywords were combinations of: "Ayurveda," "dosha imbalance," "pollution," "toxic exposure," "prakriti," "air pollution," "water contamination," "soil pollutants," "noise pollution," and "environmental determinants." Truncations and Boolean operators were used to maximize sensitivity and specificity.

Inclusion and Exclusion Criteria

This research included studies if they fulfilled certain eligibility criteria. To start with, articles published in English that addressed the physiological or psychosomatic impact of environment pollutants were included. Peer-reviewed journals that examined the influence of air, water, soil, or noise pollution on human health outcomes were given preference. Besides, clinical, experimental, or theoretical studies examining the intersection of environmental health determinants and Ayurveda were included. Classical Ayurvedic texts and academic critiques considering agantuja nidana (external factors), dosha vitiation, or environmental factors affecting

prakriti were chosen. Those studies that were grey literature, not peer-reviewed essays, or did not contain significant references to Ayurveda or environmental health were excluded. In addition, articles strictly involving pharmaceutical interventions without consideration of etiological aspects were also not included.

Analytical Framework

The study was organized around the Ayurvedic tridosha theory, correlating certain environmental contaminants with characteristics and symptoms of Vata, Pitta, and Kapha disturbances. For instance, particulate matter and dry winds were correlated with Vata vitiation, hotness and radiation with Pitta imbalance, humidity, moldiness, and stagnant settings with Kapha disturbances. Disorders caused by pollution were categorized through Ayurvedic nosological systems (Vyadhi Lakshana), such as gastrointestinal, dermatological, respiratory, and neurocognitive syndromes. In addition, susceptibility was translated in terms of the individual's prakriti and seasonal rhythms (ritucharya), bringing together traditional Ayurvedic models of prevention (dinacharya, panchakarma) and contemporary health risk profiles.

RESULTS

Air Pollution and Dosha Imbalance

Air pollution, including fine particulate matter (PM2.5 and PM10), nitrogen dioxide, carbon monoxide, and sulfur dioxide, has complex implications on doshic homeostasis. Dryness, mobility, and subtlety of Vata dosha are especially vulnerable to the effects of air pollutants, causing symptoms like insomnia, breathlessness, stiffness of joints, and neurological disturbances. The vitiation of Vyana and Udana Vata can be inferred by symptoms like restlessness, dryness of the skin, and shortness of breath. Reactive pollutants also enhance Pitta-related inflammation in eyes and skin, and congestive Kapha aggravation is seen in chronic bronchitis and sinusitis. Table 1 presents the effect of major air pollutants on Ayurvedic doshas and describes how PM2.5, NO_2, CO, and SO_2 affect Vata, Pitta, and Kapha in terms of classical indicators such as Vata vitiation and Rakta dushti and their correlation with contemporary clinical symptoms such as asthma, lethargy, and inflammation.

Table 1: Effects of Major Air Pollutants on Dosha Imbalance and Corresponding Modern Symptoms

Air Pollutant	Affected Doshas	Classical Ayurvedic Indicators	Modern Symptoms/Effects
PM2.5 & PM10	Vata, Pitta	Vyana/Udana Vata vitiation, dryness, breathlessness	Insomnia, asthma, neurological irritation, joint pain
Nitrogen Dioxide (NO_2)	Pitta, Kapha	Pitta aggravation, Rakta dushti, skin/eye irritation	Skin rashes, ocular inflammation, sore throat
Carbon Monoxide (CO)	Vata	Udana Vata disturbance, fatigue, dizziness	Cognitive dullness, fatigue, impaired oxygenation
Sulfur Dioxide (SO_2)	Pitta, Kapha	Kapha congestion, Pitta inflammation, mucosal damage	Bronchitis, cough, chest discomfort, sinusitis

Water Contamination and Pitta-Kapha Disorders

Heavy metals (such as lead, mercury, and arsenic), nitrates, and organic toxins in water directly interfere with gastrointestinal and hepatic functioning, chiefly perturbing Pitta dosha. They cause acid reflux, eruptions on the skin, and liver malfunctions—markers of Rakta and Rasa dhatu dushti with compromised Agni. In Kapha types, water-borne toxins express as edema, sluggish metabolism, and mucous membrane malfunction. Classical symptoms concur with Kapha vriddhi and Pitta prakopa with secondary ama formation downstream when digestion is repressed.

Table 2 presents the doshic effects of prominent water pollutants, how the heavy metals and nitrates mainly effect Pitta and Kapha. Ayurvedic classical symptoms include Rakta dushti, imbalance of Agni, and Ama formation. These alterations correspond to clinical symptoms of today like liver impairment, dermal toxicity, sluggish metabolism, and gastrointestinal upsets.

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Table 2: Water Pollutants and Their Impact on Dosha Balance and Health

Water Pollutant	Affected Doshas	Classical Ayurvedic Indicators	Modern Symptoms/Effects
Lead (Pb)	Pitta	Rakta dushti, liver inflammation, Agni vitiation	Abdominal cramps, anemia, hepatic dysfunction
Mercury (Hg)	Pitta, Kapha	Kapha-Pitta aggravation, sluggish metabolism, Rasa dushti	Neurological symptoms, tremors, slow metabolism
Arsenic (As)	Pitta	Pitta prakopa, skin toxicity, blood impurity	Skin lesions, gastrointestinal distress, carcinogenic risk
Nitrates	Kapha, Pitta	Kapha vriddhi, water retention, Manda agni	Cyanosis, nausea, methemoglobinemia
Pesticides (Organic compounds)	Pitta, Kapha	Ama formation, Agni dushti, mucosal irritation	Gastrointestinal irritation, endocrine disruption, nausea

Soil and Food-Borne Pollution

Contaminated food and pesticide-contaminated soil are primary sources of metabolic upset, affecting Pitta and Kapha doshas primarily. Cumulative toxicity develops due to exposure to persistent organic pollutants (POPs), presenting as indigestion, eruptions on the skin, and allergic rhinitis—symptom of Agni dushti, Ama utpatti, and Kapha-Pitta aggravation. Inefficient assimilation of nutrients by food, a characteristic of Agnimandya, is similar to clinical presentations of metabolic syndrome and inflammatory bowel diseases. Figure 1 is a comparative chart of primary soil and food-borne toxins and their doshic impact. Organochlorine insecticides and heavy metals intensely exacerbate Pitta, and nitrates increase Kapha.

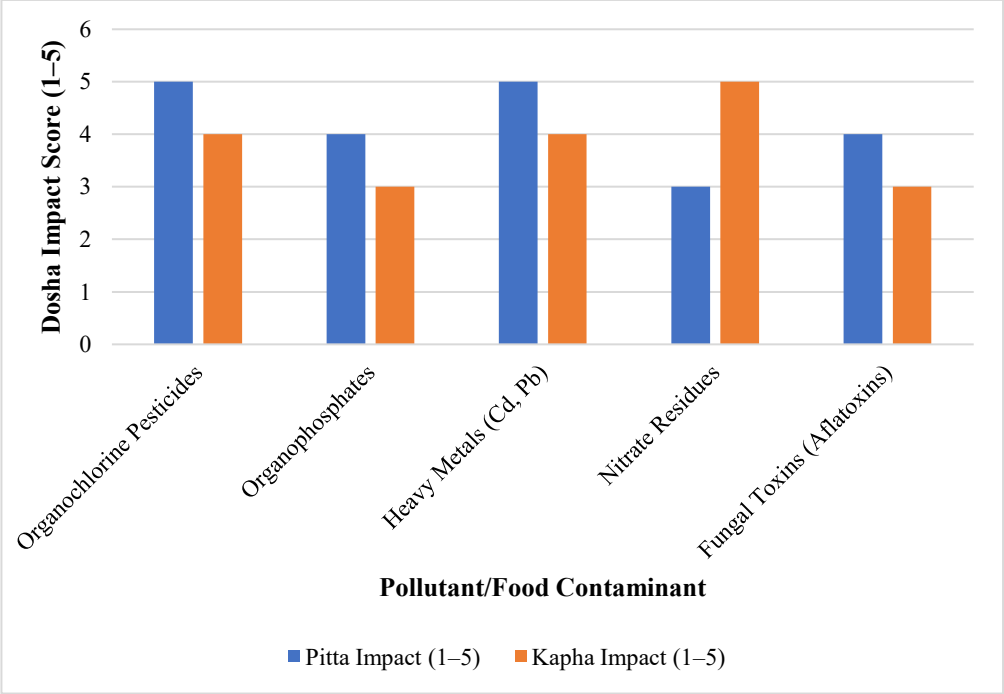

Figure 1: Dosha Impact Scores of Soils and Food-Borne Pollutants

Noise and Electromagnetic Pollution

Vata, as linked with the hearing pathway and brain function, is grossly deranged by long-term noise and electromagnetic field (EMF) exposure. Symptoms are anxiety, memory impairment, tinnitus, and insomnia—classic Vata disorders related to Manovaha srotas and Majja dhatu imbalance. Pitta too may be hyperstimulated and lead to irritability and hypertension. Such influences are indicative of Manasika vikara, pointing to the subtle effect of intangible agantuja nidana (outer agents) on psychophysiological equilibrium. Figure 2 illustrates the doshic effect of different sources of noise and EMFs. Vata is always more agitated than Pitta, particularly by mobile radiation and traffic sounds.

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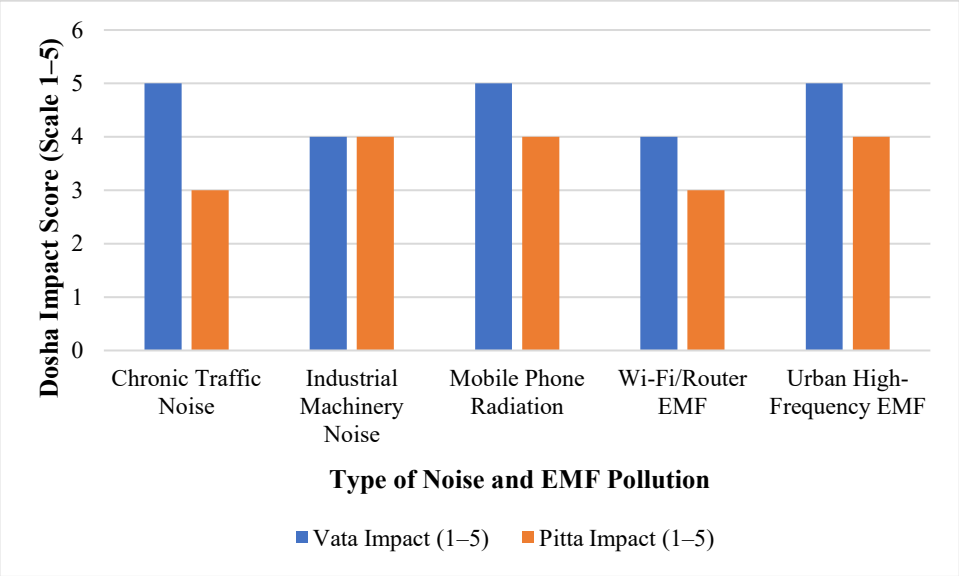

Figure 2: Dosha Impact of Noise and Electromagnetic Pollution

Urban vs. Rural Exposure and Dosha Variability

Environmental determinants are quite different in urban and rural areas. Urban areas, characterized by greater air, noise, and chemical pollution, support Vata-Pitta vitiation, while rural areas can have microbial contamination of water or food, giving rise to Kapha-Pitta disturbances. Seasonal discordance (ritu viparyaya) and irregular lifestyle habits (asatmya vihara) in cities additionally unbalance doshic equilibrium. The Ayurvedic concept of Desha (habitat) reaffirms that geographical and ecological factors have a pivotal impact on disease expression and susceptibility. Figure 3 provides dosha-specific sensitivity ratings to environmental toxins. Vata demonstrates increased susceptibility to noise and air pollution, whereas Pitta is most sensitive to water and EMF exposure. Kapha responds most to soil and water toxins. These results validate person-specific Ayurvedic treatment according to environmental risk stratification.

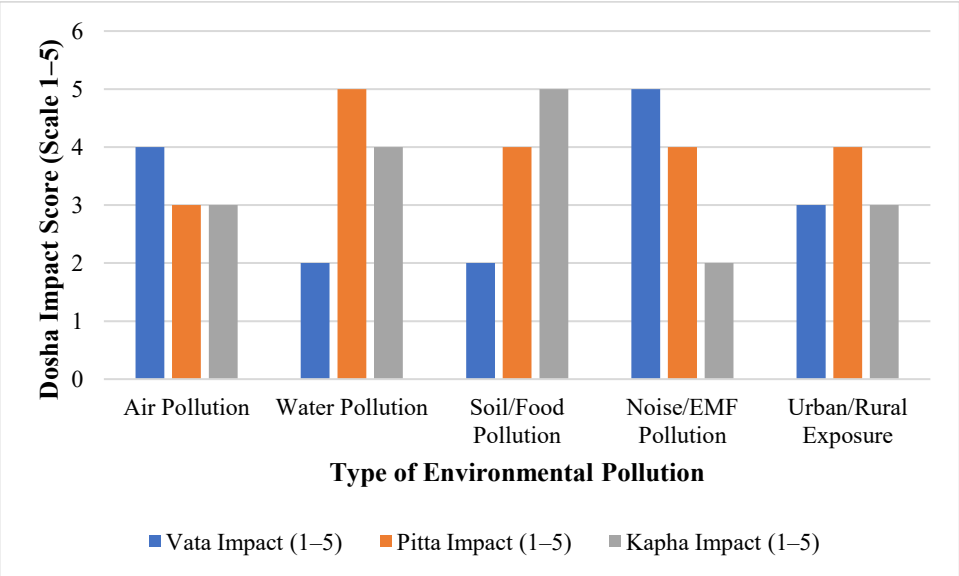

Figure 3: Dosha Sensitivity to Environmental Pollution (Scale: 1–5)

DISCUSSION

The results of this study reveal a definite doshic disturbance pattern associated with different types of environmental pollution. According to Ayurveda, disease occurs due to Nidana (etiological agents) that could either be Agnatuja (external) or Nijat (internal). The toxins under investigation in this study are air, water, soil-

borne toxins, noise, and EMF exposures that can be viewed as Agnatuja Nidanas, disrupting doshic balance directly or indirectly by interacting with the Srotas (channels), Dhatus (tissues), and Agni (digestive fire) (Tubaki & Prasad, 2022; Nedungadi et al., 2023).

Air pollution with its dehydrating, harsh, and mobile nature directly corresponds with Vata dosha, most affecting Udana and Vyana Vata. The symptoms seen, includes insomnia, anxiety, and joint pain that are Vata disorders of the classical type, reflecting deranged movement, nervous imbalance, and psychic tension (Chinthala et al., 2023). Fine particulates and chemical irritants also trigger Pitta aggravation, most of all through skin inflammation and Rakta dushti (vitiation of blood). Pollution of water, particularly by heavy metals like lead, mercury, and arsenic, has strong Pitta and Kapha provoking tendencies. Pitta controls metabolic transformation, and toxins impairing liver and gastrointestinal function are unmistakable indications of Pitta prakopa. Kapha disturbance is clear from slow metabolism, mucosal congestion, and water retention. These correspond to Kapha vriddhi, Ama (toxin) generation, and Mandagni (low digestive fire) (Sikder, 2024). Soil and food-borne contaminants impact digestion, assimilation, and immunity were basic functions of Agni and Rasa Dhatu. Pesticides and agrotoxins destroy Pitta-Kapha doshas and trigger Ama production, resulting in inflammatory disease and syndromes of metabolic dysregulation. From an Ayurvedic perspective, these manifestations indicate disturbed Pachaka Pitta and stored Kapha within the Annavaha Srotas (gastrointestinal tract) (Dinesh et al., 2022).

Noise and EMF pollution clearly affect Vata dosha, specifically via the Majja Dhatu (nervous tissue) and Manovaha Srotas (paths of the mind). Symptoms like mental exhaustion, insomnia, anxiety, and emotional unsteadiness clearly show Vata vitiation in the mental and neurological arenas (Steer, 2018). Concurrent Pitta aggravation, expressed as irascibility and hypertension, expresses the thermal, penetrating quality of radiation exposure (Abraham, 2024). Finally, urban–rural exposure variations reflect contextual doshic changes. Urban environments have higher Vata-Pitta disorder prevalence due to ongoing exposure to noise, radiation, and man-made chemicals, while rural environments can cause Kapha disturbance through microbial exposure and dampness. This aligns with the Desha (region-specific) and Ritu (seasonal) factors accentuated in Ayurveda Samhitas (Mathpati et al., 2020).

The doshic imbalances identified in this research bear remarkable similarities to contemporary pathophysiological evidence. Air pollution, for example, is now definitively associated with respiratory illness, neuroinflammation, and oxidative stress—all of which are Vata–Pitta provoking conditions (Landrigan et al., 2017). Epidemiologic research indicates that long-term exposure to PM2.5 boosts the risk of Alzheimer's, depression, and cardiovascular disease—conditions that Ayurveda links with Majja, Rasa, and Rakta dhatu vitiation. Waterborne heavy metals like lead and arsenic are associated with liver impairment, mental impairment, and malignancies. The pathologies reflect traditional Rakta dushti, Pitta prakopa, and Agni dysfunctions (Haidar et al., 2023). Likewise, endocrine-disrupting chemicals in drinking water reflect Ama accumulation and lead to hormonal and metabolic diseases.

Soil pesticides and agrochemicals were linked with metabolic syndrome, autoimmunity, and gut dysbiosis (Prüss-Ustün et al., 2017). All these effects resonate with Ayurvedic processes of Agni dushti, Ama circulation, and Ojas kshaya (vitality depletion). Increased prevalence of conditions like IBS, GERD, and leaky gut syndrome also supports the Ayurvedic assertion that disturbed digestion is the source of disease. Noise and EMF radiation, being intangible, are increasingly understood as biological disruptors. Several studies have correlated EMF exposure with disrupted cortisol rhythms, heightened oxidative stress, and neuroendocrine disruption (Schuermann & Mevissen, 2020). Such evidence supports Ayurvedic explanations of Vata-Pitta disorders expressed in the Manasika (mental) and Majja (nervous) channels. The dose-response patterns outlined in contemporary toxicology supplement the idea of Vyadhi bala (disease strength) and Rogi bala (patient strength) in Ayurveda. Sensitivity depends on prakriti—personal constitution—accounting for why some individuals have more intense doshic reactions to environmental exposure than others (Kashid & Amarprakash, 2020).

From the point of view of diagnosis, environmental exposure should now be considered an important Nidana (etiological factor) in Ayurvedic clinical evaluation. Although traditionally classified under Agantuja nidanas (exogenous causes), air, water, soil contaminants, noise, and electromagnetic fields must be reinterpretated in this traditional paradigm to accommodate contemporary realities (Kumaraswamy, 2020). Such pollutants act as Vikara Hetu (pathological factors), disrupting doshic equilibrium and instigating disease. Their pathological

actions must be considered in terms of Rogavishesh (the particular qualities of the disease—its potency, site, and qualitative character) and Rogi Bala (the patient's inherent resisting power, based on age, prakriti, digestive power, integrity of the tissues, and emotional resilience).

As an example, a patient with a Vata-dominant prakriti residing in a noisy, air-polluted city environment is more susceptible to develop Vata disorders like insomnia, irritable bowel syndrome, and anxiety, as a result of cumulative environmental and constitutional susceptibility. On the other hand, those with Pitta-predominant constitutions chronically exposed to pesticides, solvents, or other chemical substances may be more prone to conditions like inflammation of the liver, skin disorders, and ulcerative colitis—all of which are regarded as manifestations of Pitta prakopa. Contemporary Ayurvedic practice needs to modify diagnostic procedures to integrate environmental exposure histories into constitutional assessment. Existing tools like prakriti pariksha (body constitution assessment) and agni pariksha (digestive fire assessment) can be re-tuned to include exposures to toxicants in air, water, food, and digital spaces. This integrative approach will make Nidana Panchaka (five-fold disease analysis) richer in its interpretation and will allow for more specific, personalized, and context-sensitive treatment plans.

Considering the inevitable nature of exposure to modern environments, preventive care in Ayurveda becomes imperative. The classics offer strong daily and seasonal routines—dinacharya and ritucharya meant to preserve doshic balance even in unfavorable situations. Dinacharya suggestions like nasya (nasal drops of oil), abhyanga (self-massage), and dhoomapana (smoking herbs) can guard mucosal membranes against airborne toxins and calm Vata-Pitta vitiation. Triphala or ghee taken daily strengthens antioxidant defense, maintains Agni, and prevents Ama formation (Bairwa et al., 2025). Ritucharya, harmonization of lifestyle with doshic seasonal changes, is particularly significant in the dirty urban atmosphere where seasonal changes are chemically controlled. For example, Pitta-relieving diets and cooling drugs are necessary during summer seasons, especially when water and land pollutants are common.

Rasayana therapy, which is a rejuvenation modality using tonics and adaptogens, can restore dhatu injury and replenish Ojas lost as a result of oxidative and environmental stress. Ashwagandha, Guduchi, Brahmi, and Shatavari have shown clinical evidence of neuroprotection, liver protection, and adaptogenic activity (Mikulska et al., 2023). Panchakarma, Ayurveda's comprehensive detoxification therapy, provides a systemic approach to remove earth-accrued Ama and doshic toxins. Vamana (medicated emesis) and Virechana (purge) act against Kapha and Pitta respectively, best suited to remove water and soil-acquired pollutants. Basti (medicated enema) addresses Vata, most helpful in EMF- and noise-exposed subjects presenting with anxiety or insomnia (Patil & Thakar, 2017). These treatments are not only therapeutic but prophylactic when given seasonally or after high-risk exposure. When individualized to prakriti and vikriti (pathological state), Ayurvedic programs can reduce the long-term burden of environmental toxins.

Increased disease burden caused by pollution requires an intersection of traditional Ayurveda and modern environmental health. Policymakers and doctors need to embrace integrative paradigms that recognize pollutants as novel Nidanas (Arshad et al., 2024). Ayurveda's constitutional system offers a patient-specific, dynamic paradigm for understanding why and how specific individuals vary in response to the same environmental insults. In addition, incorporation of Ayurvedic diagnostics within environmental epidemiology, such as following disease prevalence by prakriti, or doshic risk mapping of areas, would be able to guide public health policy. Urban planning can also be aided with Ayurvedic spatial principles (e.g., Vastu) that focus on natural light, ventilation, and Sattvic living spaces. Research will now have to shift towards hybrid models: integrating contemporary toxicological tests with Ayurvedic dosha analysis, testing detox regimens through biomarkers, and merging ancient srotas theory with organ system pathology. Such integration can provide new diagnostics, interventions, and resilience practices in the context of increasing ecological and biomedical pressures.

The current study has some limitations. First, dosha imbalance interpretation in terms of environmental toxins relies on traditional Ayurvedic theory and can be subject to subjective interpretation. Attribution of particular toxins to Vata, Pitta, and Kapha exacerbation is not supported by direct experimental evidence and relies on symptom correlation over biomarker evidence. Second, little empirical research exists that directly connects Ayurvedic dosha pathology with quantifiable environmental exposure data. Much of the current literature exists in isolated disciplinary bubbles, so integrative analysis is difficult. It would take interdisciplinary studies synthesizing Ayurvedic diagnostics with contemporary environmental health measures to develop validated,

reproducible models. Until that time, these sort of dosha-pollutant correlations remain theoretical and interpretive and must be used with caution in clinical settings.

The future will require studies working to create dosha-based risk assessment measures that are quantitative for measuring individual sensitivity to different environmental toxins. These devices can merge Ayurvedic diagnoses such as prakriti profiling and agni evaluation with data on environmental exposure to better predict risk of disease. There needs to be interdisciplinary cooperation in conjoining Ayurvedic theory with biomedical, environmental, and epidemiological studies can provide new models for diagnosis and prevention. Public health policy also needs to include Ayurvedic concepts to combat pollution-related health problems, particularly in high-risk urban areas. Seasonal regimen policies (ritucharya), detoxification programs (panchakarma), and adaptogenic treatments (rasayana) can increase population resilience. Next-generation models need to shift away from theory-based integration towards evidence-based Ayur-environmental models that are scalable, equitable, and efficient for preventive healthcare delivery.

CONCLUSION

Environmental toxins are one of the most prevalent and subtle health dangers in contemporary society. In the Ayurvedic context, such exposures are agantuja nidana—external causative agents that can derange Vata, Pitta, and Kapha doshas and Agni, Dhatu, and Srotas equilibrium. This work recognizes an evident connection between certain categories of pollutants and resultant doshic reactions: air and noise pollution work mainly on aggravating Vata, waterborne toxins upset Pitta, and food/soil contamination enhances Kapha disorders as well as Ama formation. These associations are supported by symptom congruence to classical Ayurvedic nosology and contemporary clinical evidence, such as cognitive impairment, metabolic syndrome, hepatotoxicity, and respiratory disorders. Ayurveda's constitutional approach, especially its focus on prakriti, enables subtlety in the interpretation of an individual's susceptibility to environmental hazard. Dosha-relevant preventive interventions—nasya and abhyanga to panchakarma and rasayana therapies, provide viable, context-sensitive interventions to counter pollutant-induced disease progression. Diagnostic use of Rogavishesh and Rogi Bala in the presence of pollution enhances clinical judgment and enables focused constitutional management. There is a critical need to connect classical Ayurvedic observations with contemporary toxicological information through interdisciplinary study and environmental policy linkage. Dosha-risk mapping, prakriti-guided exposure assessments, and biomarker validation of Ayurvedic treatments offer promising frontiers. An ecological reinterpretation of Ayurvedic concepts can facilitate sustainable public health models for polluted urban ecosystems. Taking this integrative route strengthens Ayurveda's role to offer holistic, tailored care in a more toxic world.

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