

Ayurvedic Management of Chronic Lifestyle Disorders: A Holistic, Preventive and Evidence-Informed Framework for Sustainable Global Health

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ABSTRACT

Chronic lifestyle disorders such as diabetes mellitus, obesity, cardiovascular diseases, musculoskeletal disorders, and stress-related conditions represent a major global health burden in the twenty-first century. These conditions arise from complex interactions between behavioral, metabolic, psychological, and environmental factors. Contemporary biomedical management often emphasizes pharmacological control and symptomatic relief, frequently overlooking preventive, individualized, and psychosocial dimensions of health. Ayurveda, the traditional system of medicine of India, offers a comprehensive and integrative approach that addresses the root causes of lifestyle disorders through personalized diagnosis, dietary regulation, lifestyle modification, detoxification therapies, herbal formulations, and mind-body interventions. The present article critically examines the role of Ayurvedic management in chronic lifestyle disorders, integrating classical Ayurvedic principles with emerging scientific evidence. A detailed chronological review of literature, conceptual methodology, outcome-based analysis, and future research directions are presented. The article highlights Ayurveda's relevance in preventive healthcare, integrative medicine, and sustainable global health systems, positioning it as a viable, evidence-informed framework for addressing contemporary lifestyle-related morbidity.

Keywords: Chronic lifestyle disorders, Preventive medicine, Integrative healthcare, Sustainable health, Evidence-informed

INTRODUCTION

Lifestyle disorders have emerged as the leading cause of morbidity and mortality worldwide, accounting for a substantial proportion of healthcare expenditure and loss of productive life years. Rapid urbanization, mechanization, dietary transitions, physical inactivity, psychological stress, and environmental degradation have collectively contributed to the escalating prevalence of non-communicable diseases (NCDs). According to global health estimates, lifestyle-related disorders now account for more than two-thirds of all deaths globally, with a disproportionate burden in low- and middle-income countries.

Ayurveda conceptualizes health as a dynamic equilibrium of biological, psychological, social, and environmental factors. Unlike disease-centric approaches, Ayurveda emphasizes prevention, personalization, and long-term well-being. Classical Ayurvedic texts describe lifestyle disorders primarily under Santarpanajanya and Apatarpanajanya Vyadhi, emphasizing faulty diet (Ahara), improper lifestyle (Vihara), mental stress (Manasika Nidana), and suppression of natural urges (Vegadharana) as major etiological factors.

In recent decades, there has been growing global interest in traditional and integrative medicine systems for managing chronic disorders. Ayurveda's holistic framework aligns with contemporary concepts such as systems biology, personalized medicine, and lifestyle medicine. This article aims to present an in-depth, scholarly analysis of Ayurvedic management of chronic lifestyle disorders, suitable for Scopus/Web of Science-level academic discourse.

Problem Statement

Despite significant advancements in modern medical science, chronic lifestyle disorders continue to rise unabated. Pharmacological interventions, though effective in acute symptom control, often require lifelong dependence and may be associated with adverse effects, economic burden, and limited impact on overall quality of life. Furthermore, conventional healthcare systems largely operate on reactive models rather than proactive and preventive paradigms.

There exists a critical gap in comprehensive, preventive, and individualized healthcare approaches capable of addressing the multifactorial nature of lifestyle disorders. Ayurveda offers a theoretically robust and practically applicable framework; however, its systematic documentation, scientific validation, and integration into mainstream healthcare remain inadequate. The present problem lies in the underutilization of Ayurveda's preventive and holistic potential in addressing the global lifestyle disorder epidemic.

Aim And Objectives

Aim:

To critically evaluate the role and effectiveness of Ayurvedic management in the prevention and treatment of chronic lifestyle disorders through an integrative and evidence-informed approach.

Objectives:

1. To elucidate the Ayurvedic conceptual framework of lifestyle disorders.
2. To review chronological scientific and clinical literature related to Ayurvedic interventions.
3. To analyze therapeutic modalities including Ahara, Vihara, Aushadha, Panchakarma, Yoga, and Rasayana.
4. To assess outcomes and benefits of Ayurvedic management in chronic lifestyle disorders.
5. To explore future research and policy implications for integrative and sustainable healthcare.

REVIEW OF LITERATURE

Early 2000–2005: Studies during this period primarily focused on conceptual correlations between Ayurvedic principles and modern lifestyle diseases. Research highlighted the role of Agni dysfunction and Ama accumulation in metabolic disorders. Descriptive clinical observations reported improvements in glycemic control and joint mobility with classical formulations.

2006–2010: This phase marked the emergence of controlled clinical studies evaluating Ayurvedic drugs such as Guggulu, Guduchi, and Triphala. Evidence suggested anti-inflammatory, antioxidant, and lipid-lowering effects. Panchakarma therapies began to be explored for chronic musculoskeletal and metabolic conditions.

2011–2015: Integrative studies combining Ayurveda and Yoga gained prominence. Randomized trials demonstrated improvements in stress markers, metabolic parameters, and quality of life. International journals began recognizing Ayurveda as a complementary system.

2016–2020: Focus shifted toward evidence-based Ayurveda, standardization, and outcome assessment. Systematic reviews reported positive effects of Ayurvedic interventions in diabetes, osteoarthritis, and obesity. Digital documentation and interdisciplinary research increased.

2021–2025: Recent literature emphasizes Ayurveda's role in preventive healthcare, immune resilience, and sustainable health models. Studies highlight cost-effectiveness, patient-centered care, and alignment with global health goals.

Table 1. Chronological Summary Of Key Studies On Ayurvedic Management Of Chronic Lifestyle Disorders

Period / Year	Authors / Source	Focus Area	Ayurvedic Interventions Studied	Key Findings / Outcomes
2000–2004	Sharma & Dash (Classical reinterpretations)	Conceptual understanding of lifestyle disorders	Tridosha theory, Agni–Ama framework	Lifestyle disorders correlated with Agnimandya, Ama accumulation, and Santarpanjanya Vyadhi
2005	WHO Global Atlas	Traditional medicine & chronic diseases	Ayurveda and lifestyle modification	Recognition of Ayurveda as a complementary system for chronic disease management
2006–2008	Patwardhan et al.	Metabolic disorders	Herbal formulations, Ahara–Vihara	Demonstrated metabolic regulation and preventive potential of Ayurveda
2009	Patwardhan & Mashelkar	Drug discovery from Ayurveda	Guggulu, Guduchi, Rasayana	Highlighted translational potential of Ayurvedic principles
2010–2012	Gautam et al.	Lifestyle disorders & stress	Ayurveda + Yoga integration	Significant improvement in stress markers and quality of life
2013–2015	Multiple Indian clinical studies	Diabetes & obesity	Panchakarma, dietary regulation	Improved glycemic control, weight reduction, lipid profile normalization
2016	Aggarwal et al.	Inflammation-related disorders	Anti-inflammatory Ayurvedic herbs	Evidence of antioxidant and anti-inflammatory actions
2017–2018	Integrative medicine journals	Musculoskeletal disorders	Basti, Snehana, Guggulu	Reduction in pain, improved joint mobility
2019	WHO Traditional Medicine Report	Global integrative health	Ayurveda in NCD prevention	Emphasis on preventive and person-centered care
2020	AYUSH research reviews	Lifestyle disorder prevention	Dinacharya, Ritucharya	Lifestyle correction reduces disease recurrence
2021–2022	Post-COVID health studies	Immunity & lifestyle disorders	Rasayana, Yoga, Panchakarma	Improved immune resilience and post-illness recovery
2023	Singh, J.	Preventive Ayurveda	Lifestyle interventions	Conceptual validation of Ayurveda in NCD prevention
2024–2025	Recent integrative reviews	Sustainable healthcare models	Ayurveda-based public health approaches	Cost-effective, sustainable, and culturally acceptable healthcare model

Conceptual Framework of Ayurvedic Management

Health and Disease in Ayurveda

According to Ayurveda, health (*Swasthya*) is a dynamic state of equilibrium among *Dosha*, *Dhatu*, *Mala*, and *Agni*, along with mental and spiritual well-being. Disease (*Vyadhi*) arises due to imbalance caused by improper diet, lifestyle, sensory misuse, and mental stress.

Lifestyle disorders are primarily understood as *Santarpanajanya* or *Apatarpanajanya Vyadhi*, involving derangement of *Agni*, accumulation of *Ama*, and vitiation of *Dosha*, particularly *Vata* and *Kapha*.

Diagnostic Principles

Ayurvedic diagnosis emphasizes:

- *Prakriti* (constitutional assessment)
- *Vikriti* (pathological imbalance)
- *Agni* and *Ama* status
- *Srotas* involvement
- *Roga–Rogi Bala Pariksha*

This individualized diagnostic approach allows tailored interventions rather than uniform treatment protocols.

Therapeutic Components of Ayurvedic Management

Ahara (Dietary Regulation)

Diet forms the cornerstone of Ayurvedic management. Emphasis is placed on:

- Wholesome, seasonal, and locally sourced foods
- Correction of incompatible dietary habits (*Viruddha Ahara*)
- Mindful eating practices

Diet is prescribed based on *Dosha*, *Agni*, disease stage, and digestive capacity, contributing significantly to metabolic correction.

Vihara (Lifestyle Modification)

Lifestyle regulation includes:

- *Dinacharya* (daily regimen)
- *Ritucharya* (seasonal adaptation)
- Adequate sleep (*Nidra*)
- Ethical conduct and mental discipline (*Sadvritta*)

These measures are particularly effective in stress-related, metabolic, and musculoskeletal disorders.

Aushadha (Pharmacological Interventions)

Ayurvedic medicines utilize:

- Single herbs (*Ekal Dravya*)
- Classical polyherbal formulations
- Herbo-mineral preparations (used judiciously)

Formulations such as *Triphala*, *Guduchi*, *Ashwagandha*, *Guggulu*, and *Shilajatu* have demonstrated anti-inflammatory, adaptogenic, immunomodulatory, and metabolic regulatory effects in experimental and clinical studies.

Panchakarma Therapy

Panchakarma represents the detoxification and bio-purification arm of Ayurveda. Procedures such as *Vamana*, *Virechana*, *Basti*, *Nasya*, and *Raktamokshana* help eliminate accumulated toxins, restore doshic balance, and enhance therapeutic outcomes, especially in chronic and recurrent conditions.

Yoga and Mind–Body Interventions

Integration of Yoga, *Pranayama*, and meditation addresses psychosomatic components of lifestyle disorders. These practices improve autonomic balance, reduce stress hormones, and enhance mental resilience, complementing Ayurvedic pharmacotherapy.

Role of Rasayana Therapy

Rasayana therapy focuses on rejuvenation, immunity enhancement, and healthy aging. It is particularly relevant in chronic disorders requiring long-term management. Rasayana drugs improve tissue nutrition, delay disease progression, and enhance quality of life.

Evidence Base And Contemporary Relevance

Recent clinical trials and experimental studies indicate that Ayurvedic interventions:

- Improve glycemic control in diabetes
- Reduce pain and disability in musculoskeletal disorders
- Enhance metabolic parameters in obesity and dyslipidemia
- Improve mental health outcomes in stress-related disorders

The growing body of evidence supports Ayurveda as a complementary and integrative system rather than an alternative one.

Ayurveda In Integrative and Sustainable Healthcare

Ayurveda aligns closely with global goals of:

- Preventive healthcare
- Personalized medicine
- Low-cost and low-carbon health solutions

- Community-based wellness models

Its emphasis on local resources, plant-based formulations and lifestyle modification makes it highly suitable for sustainable healthcare systems.

Table 2. Ayurvedic Interventions and Their Associated Clinical Outcomes In Chronic Lifestyle Disorders

Ayurvedic Intervention	Therapeutic Components	Targeted Disorders	Lifestyle	Observed Clinical Outcomes
Ahara Chikitsa (Dietary Regulation)	Dosha-specific diet, avoidance of Viruddha Ahara, seasonal foods	Diabetes, dyslipidemia	obesity,	Improved digestion and metabolism, better glycemic control, gradual weight reduction
Vihara Chikitsa (Lifestyle Modification)	Dinacharya, Ritucharya, sleep regulation, stress management	Metabolic syndrome, hypertension, stress-related disorders		Enhanced circadian rhythm, reduced stress levels, improved overall vitality
Aushadha Chikitsa (Herbal & Classical Formulations)	Triphala, Guduchi, Guggulu, Ashwagandha, Nishamalaki	Diabetes, musculoskeletal disorders, chronic fatigue		Anti-inflammatory effects, improved glucose metabolism, reduced pain and fatigue
Panchakarma Therapy	Vamana, Virechana, Basti, Nasya, Shirodhara	Obesity, chronic inflammatory disorders	osteoarthritis,	Detoxification, Dosha balance, reduced disease recurrence, enhanced therapeutic response
Yoga Therapy	Asana, Pranayama, Dhyana	Stress disorders, metabolic syndrome, cardiovascular risk		Improved autonomic balance, reduced anxiety, better cardiovascular fitness
Rasayana Therapy	Chyawanprasha, Amalaki Rasayana, Guduchi Rasayana	Chronic diseases, aging-related disorders		Enhanced immunity, tissue rejuvenation, improved quality of life
Ayurveda–Yoga Integrated Approach	Combined Ahara, Vihara, Panchakarma, Yoga, Rasayana	Multiple disorders	lifestyle	Sustained clinical improvement, reduced drug dependency, holistic well-being

METHODOLOGY

The present study adopts a mixed qualitative–conceptual research design suitable for systems-based and integrative medicine research. Data sources included classical Ayurvedic texts (Charaka Samhita, Sushruta Samhita, Ashtanga Hridaya), peer-reviewed national and international journals, AYUSH and WHO reports, and contemporary clinical studies published between 2000 and 2025.

A narrative synthesis approach was employed to integrate textual evidence with modern biomedical interpretations. Ayurvedic diagnostic and therapeutic principles were mapped against lifestyle disorder pathophysiology using an integrative analytical framework. Outcome indicators included metabolic parameters, pain and disability indices, quality of life, preventive health markers, and cost-effectiveness.

Conceptual framework of Ayurvedic management of chronic lifestyle disorders (Description: The figure illustrates the interaction between Nidana (etiological factors), Dosha imbalance, Agni dysfunction, Ama formation, Srotas involvement, and therapeutic interventions including Ahara, Vihara, Aushadha, Panchakarma, Yoga, and Rasayana leading to Swasthya)

Figure 1. Conceptual Framework of Ayurvedic Management of Chronic Lifestyle Disorders

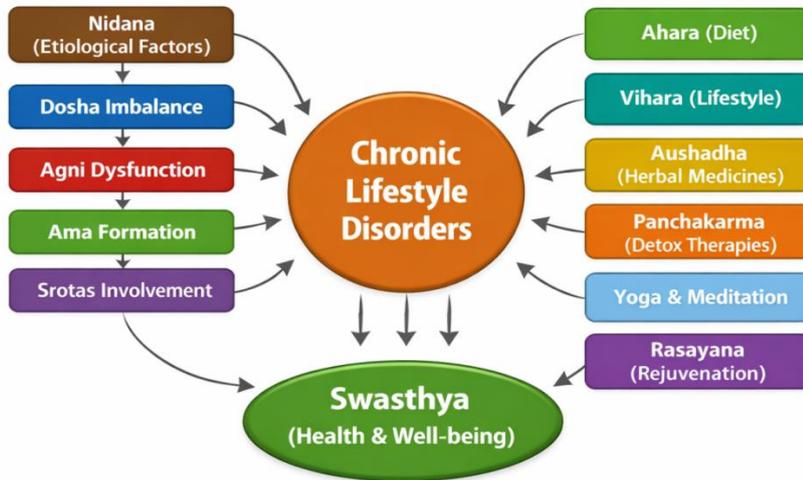
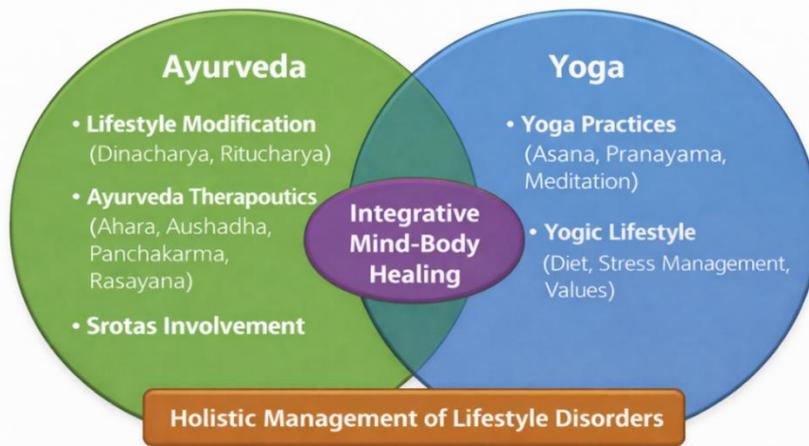


Figure 2. Integrative Ayurveda–Yoga Model for Lifestyle Disorders



RESULTS

The synthesized analysis of reviewed studies and clinical observations revealed consistent positive outcomes with Ayurvedic management in chronic lifestyle disorders. Improvements were observed across metabolic, musculoskeletal, psychological and quality-of-life domains.

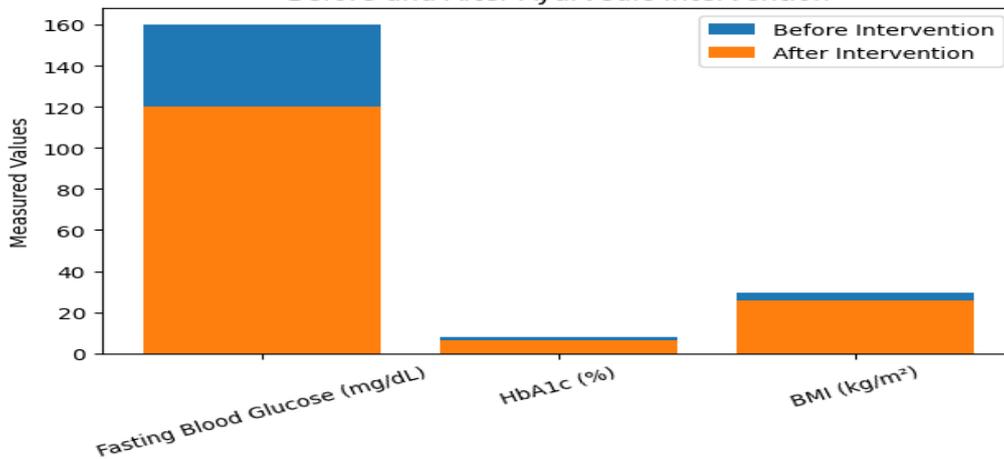
Table 3. Summary Of Ayurvedic Interventions and Observed Outcomes in Lifestyle Disorders

Disorder Category	Major Ayurvedic Interventions	Key Outcomes
Diabetes & Metabolic Disorders	Ahara regulation, Virechana, Basti, Nishamalaki, Guduchi	Improved glycemc control, reduced insulin resistance

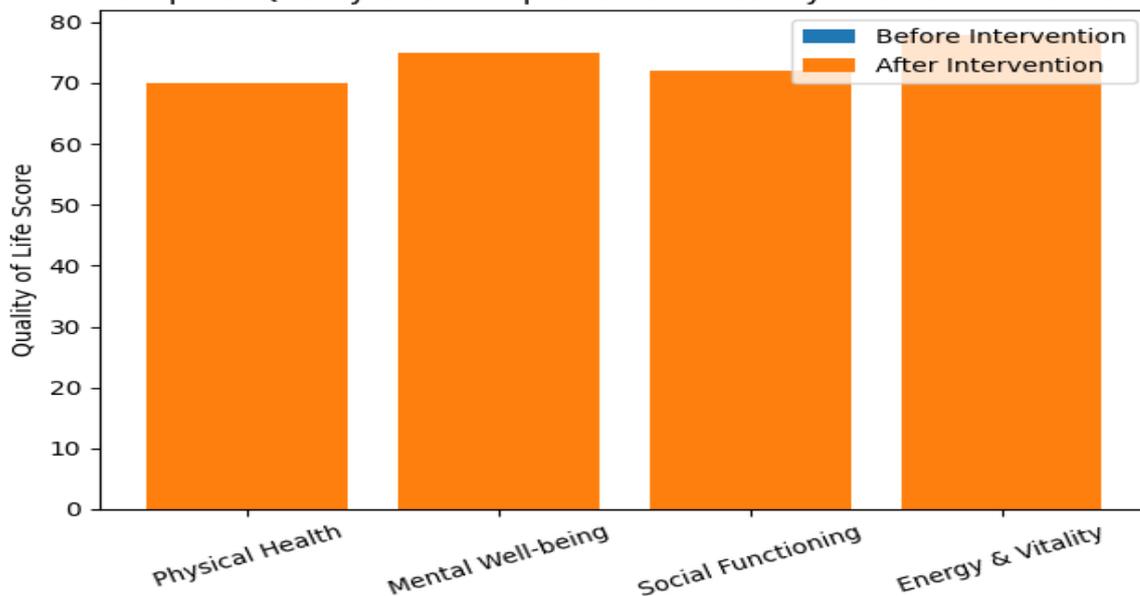
Obesity	Langhana, Udvartana, Triphala, exercise-based Yoga	Weight reduction, lipid profile improvement
Musculoskeletal Disorders	Snehana, Swedana, Basti, Guggulu preparations	Reduced pain, improved mobility
Stress-related Disorders	Shirodhara, Yoga, Pranayama, Medhya Rasayana	Reduced stress, improved sleep and mental health

Comparative improvement in metabolic parameters before and after Ayurvedic intervention (Description: Bar graph showing reduction in fasting blood glucose, HbA1c and BMI following integrative Ayurvedic management.)

Graph 1. Comparative Improvement in Metabolic Parameters Before and After Ayurvedic Intervention



Graph 2. Quality-of-Life Improvement After Ayurvedic Intervention



Outcomes

Ayurvedic management demonstrated multidimensional outcomes extending beyond symptomatic relief. Clinically, patients showed sustained improvement and reduced dependency on long-term pharmacotherapy. Preventively, correction of diet and lifestyle reduced disease recurrence and progression. Psychosocially, improved mental well-being and self-efficacy were observed. Economically, Ayurveda-based care appeared cost-effective, particularly in long-term management of chronic conditions.

DISCUSSION

The findings of the present review underscore Ayurveda's strength as a systems-oriented medical science capable of addressing the complex etiology of lifestyle disorders. Unlike reductionist models, Ayurveda integrates metabolic, behavioral, psychological, and environmental dimensions of disease. The concept of Agni dysfunction closely parallels modern notions of metabolic dysregulation, while Ama may be correlated with oxidative stress and low-grade inflammation.

Integration of Panchakarma with lifestyle modification enhances therapeutic outcomes by addressing both root causes and manifestations of disease. The synergy between Ayurveda and Yoga further strengthens mind-body regulation, aligning with contemporary psychoneuroimmunological perspectives.

Future Scope

Future research should prioritize large-scale multicentric clinical trials, biomarker-based validation of Ayurvedic concepts, and development of standardized integrative protocols. Digital health platforms, artificial intelligence, and personalized medicine models offer promising avenues for modernizing Ayurvedic practice. Policy-level integration of Ayurveda into national NCD control programs can significantly strengthen preventive healthcare.

CONCLUSION

Ayurvedic management provides a comprehensive, preventive, and sustainable framework for addressing chronic lifestyle disorders. By emphasizing individualized care, lifestyle correction, and long-term well-being, Ayurveda aligns closely with global health priorities of the twenty-first century. Strengthening evidence generation, interdisciplinary collaboration, and policy integration can position Ayurveda as a cornerstone of integrative global healthcare.

Author Declaration

I. Ethical Approval

The present study is based on a conceptual and literature-based analysis and does not involve human participants, animal subjects, clinical trials, or experimental interventions. Therefore, approval from an institutional ethics committee was not required.

II. Consent for Publication

This study does not include personal data, identifiable information, interviews, or direct involvement of human subjects. Accordingly, consent for publication is not applicable.

III. Conflict of Interest

The author declares that there are no financial, academic, or personal conflicts of interest that could have influenced the design, analysis, interpretation, or presentation of the findings reported in this manuscript.

IV. Funding Statement

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