International Journal of Technology and Applied Science (IJTAS)

E-ISSN: 2230-9004 ● Website: www.ijtas.com ● Email: editor@ijtas.com

Ayurvedic Principles in Modern Medicine: Integrating Traditional Indian Knowledge with Contemporary Healthcare

Dr. Rajesh Kumar Patel

Guest lecturer
Department of Botany, K. G. Arts and science college, University of SNPV, Raigarh.
ORCID ID: 0009-0008-7116-0737

Abstract:
Ayurveda, a traditional school of medicine in the world, is still a significant component of the Indian health culture and is becoming the subject of more global debates on integrative medicine. The Global Traditional Medicine Strategy of World Health Organization 2025-2034 directly promotes the production of evidence, the regulation of safety, and the responsible inclusion of traditional, complementary and integrative medicine within health systems, exactly the right time to review Ayurveda as an important part of modern medicine (World Health Organization [WHO], 2025). In this paper, the elements of Ayurvedic Ayurveda whose tenets, including prakriti (individual constitution), tridosha balance, preventive care, diet and lifestyle, and personalized therapeutics can add to modern-day medical care will be discussed. It states that Ayurveda should not be employed as a substitute to biomedicine; it should be rather a complementary concept reinforcing prevention, chronic illnesses, patient-centered therapy, and holistic medicine. The paper will examine the recent literature on Ayurveda and modern medicine, find parallels with current disciplines of preventive medicine, systems biology, and personalized medicine, and examine the current institutional initiatives in India and elsewhere to integrate Ayurveda and modern medicine. It is also writing about significant challenges, such as quality of evidence, standardization, safety, education, and regulation. The conclusion of the paper is that, with evidence-based, ethically governed, and clinically selective incorporation of Ayurvedic principles, the modern healthcare can be enhanced by addressing its focus on lifestyle, individuality, long-term balance, and health promotion without compromising the rigor of the biomedical diagnosis and acute care (National Center for Complementary and Integrative Health [NCCIH], 2025; Verma et al., 2024; WHO, 2025).

Keywords: Ayurveda, integrative medicine, preventive healthcare, personalized medicine, traditional knowledge.

Introduction

Ayurveda refers to an old Indian medicine concept that has its foundations in a holistic perception of both health and illness and the interaction between man and the surrounding world. The NCCIH says Ayurveda is founded on ancient texts and depends on a natural, holistic view of both physical and mental well-being; Ayurvedic medicine could be herbs, mineral preparations, food, and exercise alongside regulating lifestyle (NCCIH, 2025). In contrast to contemporary biomedicine which tends to be disease-centered and heavily biomedicine-centered, Ayurveda focuses on constitutive individuality, bodily balance, environmental adaptation and prevention through time. The differences have traditionally prompted certain observers to consider Ayurveda and modern medicine as mutually exclusive systems. However, the overall growth of integrative and patient-centered healthcare in the world has rendered this opposition less compelling than ever. With the growing challenge of chronic disease, multimorbidity, lifestyle-related disease, stress-

related disorders, and the constraints of narrowly reductionist care, Ayurveda has re-emerged as a serious policy and scholarly issue as a possible source of clinically valuable principles (Hoenders et al., 2024; WHO, 2025).

The issue in question today is not the need of Ayurveda to replace modern medicine. Such a stance is not supported by the evidence of the modern world and the global policy. Instead, the more significant question is how any Ayurvedic principles could be introduced into the modern healthcare system in a responsible way that would not pose any threat to safety, scientific principles, and professional responsibility. The Global Traditional Medicine Strategy 2025-2034 framework of WHO recognizes four general goals: enhancing evidence, providing safety and regulation, integrating traditional and complementary medicine where it is due, and maximizing cross-sectoral value (WHO, 2025). Such a framework, in particular, is useful to Ayurveda since it changes the focus of debate to research, ideology, and utility to the general population.

This question is no longer theoretical in India. Governmental resources indicate institutional support in the integration of Ayurveda with modern medicine in the form of co-location of AYUSH services in primary and district-level facilities, integrative units of the All India Institute of Ayurvedic Sciences (AIIA), and research partnerships among the Ministry of Ayush, the Central Council of Research in Ayurvedic Sciences (CCRAS), the Indian Council of Medical Research (ICMR), and AIIMS affiliated units (Ministry of Ayush, 2024). On the international front, the fact that India is supporting the WHO Global Traditional Medicine Centre in Jamnagar further shows that Ayurveda is already a global discussion on the topic of evidence-based traditional medicine, setting of standards, and research partnerships (WHO Global Traditional Medicine Centre, 2025).

The paper claims that Ayurvedic concepts can add value to the current day medicine when interpreted in an evidence-based and system-sensitive manner. Their most pertinent modernity is prevention, personalized care, diet and lifestyle care, chronic care support, rehabilitation, and patient interaction. Simultaneously, meaningful integration needs a significant quality control, enhanced clinical evidence, toxicological vigilance, uniform formulations in suitable instances, and close differentiation between supportive integration and unproven therapeutic claims. The paper continues by surveying the literature, the important Ayurvedic concepts, finding points of intersection with modern healthcare and evidence and institutional efforts, the main challenges and future directions of integration.

Literature Review

Most current research is starting to view Ayurveda as an important part of historical medicine as well as a potential source of integrative and personalized medicine. According to Verma et al. (2024), Ayurveda is a system that prioritizes the harmony of mind, body and spirit, considering the constitution of the person, his/her lifestyle, and surroundings. In their review, they contend that closer collaboration with modern medicine can be beneficial to patient care, by introducing more personalized and preventive care into clinical practice, albeit with ongoing issues of standardization and evidence generation. The significance of this literature is related to the fact that Ayurveda is not a relic in stasis but a living body of knowledge that could be able to engage the modern medical concerns.

The second body of literature analyzes conventional and integrative medicine in terms of policy and systems level. Reviewing the WHO strategy through the prism of academic consortia of integrative medicine and health, Hoenders et al. (2024) also note that integrative healthcare incorporates the active patient engagement and a wider range of preventive and curative methods. Their efforts lead to the positioning of Ayurveda in a greater change of healthcare where people-centered care, prevention, and

plural evidence systems have become more appreciated. In this respect, the ancient Ayurvedic concern of lifestyle, food, sleep, emotional control, and constitutional variation becomes particularly topical.

WHO policy literature also assisted in the enhancement of the international legitimacy of carefully controlled integration. The 2025 strategy by WHO acknowledges the increasingly important role of traditional medicine in the world and advocates universal access to safe, effective and people-centered traditional, complementary, and integrative medicine by enhancing the available evidence, enhancing regulation, and integrating the traditional and complementary and integrative medicine within the health system (WHO, 2025). Such a change of policy is significant in that it does not support blind acceptance. Rather it gives credence to an evidence-based course of integration, the very circumstances in which Ayurveda may fruitfully relate to modern medicine.

At clinical level, authoritative sources are still reticent. NCCIH cites that some studies indicate that certain Ayurvedic preparations can be used to reduce pain and improve functionality in osteoarthritis and may help people with type 2 diabetes manage their symptoms, whereas at the same time it also emphasizes that most studies are small or poorly methodological with science still having limited evidence concerning most health conditions (NCCIH, 2025). This ambiguous image is the focus of the literature. It proposes that Ayurveda has potential useful therapeutic roles in isolated areas particularly chronic and lifestyle diseases, but that its integration into mainstream practice is selective and evidence sensitive.

Another layer is the Indian policy and institutional literature which records the actual experiments in integration. According to the Ministry of Ayush, which reported the matter in Parliament, India has undertaken the practice of co-location of AYUSH facilities at Primary Health Centres, Community Health Centres and District Hospitals; it also characterised integrative services at AIIA and collaborative research initiatives such as Ayush-ICMR Advanced Centres of Integrative Health Research associated with AIIMS institutions (Ministry of Ayush, 2024). This fact is important since it demonstrates that integration is being gradually applied on a structural level and is not being debated at the level of theory.

Collectively, the literature uncovers five general themes. To begin with, Ayurveda is also being repositioned as something that is applicable to prevention and personalization. Second, integrative medicine policy is shifting towards evidence-based inclusion, and not exclusion of traditional systems. Third, the clinical evidence of Ayurveda is encouraging in specific areas, but it is not even across the board. Fourth, there is progress in institutionally based integration in India. Fifth, standardization, regulation, quality assurance, and methodologically strong research are still the major challenges. The following analysis is guided by these themes.

The Ayurveda Ayurveda Conceptual Foundations.

Ayurveda is based on a separate medical anthropology. The concept of health is not seen as being simply a lack of illness but as a dynamic equilibrium between processes happening in the body, state of mind, digestion, excretion, and responsiveness to season, age, and environment. According to Verma et al. (2024), the uniqueness of every person and the need to treat him/her as such is one of the promises of Ayurveda. The concept is articulated in the expression of prakriti, and constitutional type, which is frequently referred to by the concept of vata, pitta, and kapha. According to the Ayurvedic traditional thought, disease occurs when these governing laws are not in balance. Although this concept is not applied in modern biomedicine, the more general concept of the patient as a unique and different person in terms of constitution, metabolism, reaction to stress and tolerance to treatment has obvious similarities with contemporary focus on precision and personalized medicine (Verma et al., 2024; Hoenders et al., 2024).
Prevention is another Ayurvedic principle. Instead of waiting until there is overt pathology, Ayurveda focuses on maintaining balance by means of normalcy, food routines, seasonal, physical exercise, sleep

routines and discipline. Ayurveda along with a combination of products with diet, physical activity, and lifestyle is similarly defined by NCCIH, demonstrating that Ayurveda has a wider therapeutic logic compared to the use of drugs alone (NCCIH, 2025). This forms one of the best areas of Ayurveda where relevance to modern medicine is concerned because the contemporary health systems are greatly overwhelmed by noncommunicable diseases where the focus is mainly on prevention and behavior change.

Health is also treated in Ayurveda as relational and systemic as opposed to being purely local. The symptoms are viewed in broader digested patterns, stress levels, daily practices and interaction with the environment. Such an orientation is not in harmony with reductionist disease models but in line with present trends in systems medicine and whole-person care, particularly in chronic disease where different causal pathways interact throughout life (Hoenders et al., 2024). This does not imply that Ayurvedic ideas can be directly compared with biomedical classes. That is, their explanatory style could provide valuable clinical questions particularly regarding lifestyle, setting, and long-term balance.

Intersections With present-day healthcare.

The strongest argument in favor of the incorporation of Ayurveda in modern medicine does not consist in the argument that classical ideas are equal to those of biomedical science but researching viable points of intersection. Personalized care is one of such areas. Sophisticated medicine is putting more emphasis on stratified therapy, individual risk factors, and personalized prevention. The focus on constitutional difference and personalized recommendations that Ayurveda has to offer can serve as an addition to this trend on the level of counseling, diet, sleep, stress management, and support in cases of chronic diseases (Verma et al., 2024).

The second one is preventive and lifestyle medicine. Modern medicine has also come to accept that most of the high-burden diseases are heavily influenced by nutrition, sedentary lifestyles, chronic stress, sleep habits and environmental exposures. Ayurveda has traditionally structured medical prescriptions along these same lines, using a different intellectual language. This renders it particularly applicable to health promotion, rehabilitation and risk reduction and not emergency intervention. Hoenders et al. (2024) believe that integrative healthcare consists of both preventive and curative methods that demand the active engagement of the patient, and these are very similar to the Ayurvedic practice.

A third area is management of chronic diseases. According to NCCIH, Ayurvedic methods such as osteoarthritis, rheumatoid arthritis, and type 2 diabetes have had some potential benefits, but this evidence remains limited and usually comes with small or imperfect studies (NCCIH, 2025). This is important because chronic diseases are usually not lent to a single short-course cure but multimodal treatment that is long-term in nature. The Ayurvedic focus on diet, daily routine, symptom pattern, and supportive herbal plans can prove clinically effective when combined with biomedical supervision and diagnosis in such situations.

Fourth one is patient-centeredness. Numerous patients are demanding treatment which considers the symptoms and energy, digestion, sleep, stress, and life quality. The holistic orientation of Ayurveda can enhance the patient engagement since it tends to offer a logical framework of self-care and behavioral change daily. This feature is appreciated by integrative care models, but the patient preference must be weighed against the safety and evidence (Hoenders et al., 2024).

Clinical and Institutional Integration.

The ongoing integration in India demonstrates what discriminatory, formalized incorporation may appear to be in action. The Ministry of Ayush replied to a parliamentary inquiry in December 2024 and said that the Government of India has embraced co-location of AYUSH facilities at PHCs, CHCs, and District Hospitals to provide patients with access to various systems of medicine via a single window (Ministry of Ayush, 2024). This model does not annul the difference between systems, instead, it establishes institutional proximity and institutional choice of patients.

According to the same official document, the All India Institute of Ayurveda in New Delhi is one of the institutions that offer integrative services in one roof, and includes centers of integrative therapy, cancer care, dentistry, critical care and emergency medicine, orthopaedics, and dietetics and nutrition as well as satellite units connected with hospitals and other facilities (Ministry of Ayush, 2024). The developments show that integration is no longer focusing on outpatient herbal consultation but multidisciplinary clinical environment.

The Ministry of Ayush also stated that there were collaborative research projects by CCRAS, ICMR, and Ayush-ICMR Advanced centres of Integrative health Research in gastrointestinal disorders, women and child health, geriatric health, and cancer care (Ministry of Ayush, 2024). These initiatives are significant since the future of integration is not more rhetorically backed, but must be supported by plausible research ecosystems, common protocols and outcome review.

Another measure towards systematic integration at the global level is the WHO Global Traditional Medicine Centre. According to WHO, India has invested the estimated USUSD 250 million towards the establishment, infrastructure and running of the Centre in Jamnagar, Gujarat (WHO Global Traditional Medicine Centre, 2025). This investment is important because it pays more attention to data, policy support, standards, and research collaboration as opposed to promotion.

Challenges to Integration

Integration is however a challenge even though there has been an increasing interest in it. The quality of evidence is the initial significant challenge. NCCIH clearly mentions the fact that there still are only a few clinical studies on Ayurvedic approaches published in Western medical journals and that evidence is still limited in most of the conditions (NCCIH, 2025). Hence, general arguments that Ayurveda works well in all types of diseases are unwarranted. More powerful randomized trials, pragmatic trials, implementation studies and safety monitoring are required.

The second issue is standardization. According to Verma et al. (2024), Ayurvedic drugs can be of different quality and strength as they can change depending on the origin, preparation, and processing. This variability is inconsistent with the current regulatory requirements of reproducibility, dosage, and quality of manufacture. Meanwhile, the customization tradition of Ayurveda can complicate the strict standardization. Integration should then be able to differentiate between standardizing safety and quality and eliminating individualized practice.

The third obstacle is the security. NCCIH cautions that certain Ayurvedic products can contain metals and some users have developed high levels of blood lead or mercury and reports some rare cases of arsenic poisoning associated with Ayurvedic products (NCCIH, 2025). These issues are not directed against Ayurveda in general, but it does require the pharmacovigilance, regulation of manufacturing, testing of products, and professional control.

The fourth difficulty is educational and epistemic. Ayurveda and biomedicine have varied theories of the body, diagnosis and causation. According to Verma et al. (2024), Ayurveda and modern medicine are in

tension between their respective approaches to clinical reasoning and their disciplines of standardisation. The two systems can be diluted by poor design in mixing. They integrate best when the weaknesses and strengths of each system are clearly known biomedicine acute diagnosis, emergency care, imaging, surgery and constitutive pharmacology, Ayurveda prevention, lifestyle control, supportive chronic treatment and constitution sensitive counseling.

The Proposed Integrative Framework.

The order of integration should be stratified as opposed to complete. To start with, acute, life threatening, infectious, surgical, and rapidly progressive conditions should primarily be accompanied by biomedical diagnosis and emergency management. Second, Ayurvedic principles must be stressed in prevention, convalescence, symptom support, stress management, self-care of chronic diseases and nutrition-lifestyle planning. Third, herbal or procedural interventions must be implemented only in the case where they are of quality, under a professional supervision and which are backed by relevant and trustworthy evidence in regard to the clinical setting. Fourth, documentation, informed consent, and outcome monitoring should be incorporated in integrative practice. Fifth, mutual literacy should be encouraged in education and not superficial fusion.

Table 1-Core Ayurvedic Principles and Their Relevance to Modern Healthcare

Ayurvedic principle	Classical meaning	Modern healthcare relevance
Prakriti	Individual constitution	Personalized care, risk stratification, tailored counseling
Tridosha balance	Functional balance of regulatory principles	Systems thinking, symptom patterning, individualized lifestyle advice
Preventive care	Maintaining balance before disease manifests	Public health, noncommunicable disease prevention, health promotion
Ahara and vihara	Diet and lifestyle as central therapeutics	Lifestyle medicine, obesity prevention, metabolic health
Daily and seasonal routine	Aligning habits with body and environment	Sleep hygiene, circadian health, behavioral medicine
Whole-person view	Mind-body-environment integration	Patient-centered care, quality of life, integrative rehabilitation

This framework avoids two extremes: uncritical acceptance and blanket dismissal. It makes room for Ayurveda where it is strongest while preserving scientific caution.

Table 2- Major Opportunities and Challenges in Integrating Ayurveda with Modern Medicine

Opportunities	Challenges
Prevention-focused care	Limited high-quality clinical trials
Chronic disease support	Product standardization difficulties
Whole-person counseling	Safety concerns in some formulations
Greater patient engagement	Variable training and regulation across settings
Cultural acceptability in India	Conceptual differences with biomedicine

Potential synergy in rehabilitation and wellness	Risk of unsupported claims or inappropriate substitution

Suggested Figures for a Research Submission
Figure 1. Conceptual Model of Integrative Care
A diagram showing two overlapping circles: “Modern Medicine” and “Ayurveda.” Modern medicine includes diagnosis, imaging, acute care, surgery, and emergency treatment. Ayurveda includes prevention, lifestyle, diet, constitution-based care, and supportive chronic management. The overlap includes patient-centered care, rehabilitation, chronic disease support, and quality-of-life improvement.
Figure 2. Stepwise Pathway for Safe Integration
A flowchart showing patient assessment → biomedical diagnosis → risk stratification → identify suitable integrative domain → use quality-assured Ayurvedic intervention if evidence/supervision exists → monitor outcomes and adverse events → revise care plan.

Discussion
Ayurvedic incorporation in modern medicine can be viewed as a question of health-system design and not triumph of ideology. Ayurveda provides a traditionally established model of personalized prevention, control of behavior, and holistic treatment. Such are the very areas where most of the contemporary systems have not yet been developed as technologically advanced. Meanwhile, modern medicine has strict standards of diagnostics, epidemiology, pharmacology, emergency treatment, and trial standards that Ayurveda must have in case it is to operate responsibly within large-scale health systems. That is why the integration must be two-way, and asymmetrical Ayurveda can contribute to the preventive and person-centered aspects of care, whereas biomedicine provides diagnostic accuracy, safety framework, and the ability to intervene on an acute basis (Hoenders et al., 2024; NCCIH, 2025).
This is also the reason why policy support is not sufficient. The strategy of WHO and institutional efforts in India provide desirable circumstances, yet only long-term integration can be ensured based on evidence pipelines, regulatory clarity, and professional competence (Ministry of Ayush, 2024; WHO, 2025). In the absence of them, the integration process will be more of a symbolic process than a clinical process. On the other hand, when research, training, safety systems are improved, Ayurveda can be used to assist modern medicine to progress beyond episodic care of the disease to a more preventive and sustainable type of medical care.

Conclusion
Ayurvedic doctrines are still very applicable in the current healthcare, particularly in prevention and personalization, support of chronic diseases, and care of the whole individual. The modern policy offered by WHO, the official integration endeavors in India, and recent academic literature also suggest that there is no longer a need to ask whether Ayurveda must be included into the healthcare dialogue, but how it can be safely, selectively, and effectively integrated (Ministry of Ayush, 2024; WHO, 2025). The best argument in favor of Ayurveda is not the substitution of biomedicine or the general statements about its effectiveness, but supplementing the practical methods of dieting, daily routine, correction of lifestyle, interaction with patients, and individualized treatment. These strong points correspond well with the present demands in the noncommunicable disease management and preventive health.
Nonetheless, to be effective in integrating, one needs to be disciplined. The quality of evidence needs to be enhanced, the issue of safety should be taken seriously, formulations should be guaranteed, and practitioners are to operate in controlled and shared models. Ayurveda can become a good complement of modern medicine when these conditions are followed. It is probable that its most important future input will be in assisting healthcare to be more preventive, culturally rooted, and person-centered without compromising its scientific rigor.

REFERENCES:

1. Hoenders, R., Ghelman, R., Portella, C., Simmons, S., Locke, A., Cramer, H., Gallego-Perez, D., & Jong, M. (2024). A review of the WHO strategy on traditional, complementary, and integrative medicine from the perspective of academic consortia for integrative medicine and health. Frontiers in Medicine, 11, Article 1395698. https://doi.org/10.3389/fmed.2024.1395698 (Frontiers)
2. Ministry of Ayush. (2024, December 13). Integration of Ayurveda with modern medicine [Lok Sabha Unstarred Question No. 3067]. Government of India.
3. National Center for Complementary and Integrative Health. (2025). Ayurvedic medicine: In depth. U.S. National Institutes of Health. (NCCIH)
4. Verma, S. K., Pandey, M., Sharma, A., & Singh, D. (2024). Exploring Ayurveda: Principles and their application in modern medicine. Bulletin of the National Research Centre, 48, Article 77. https://doi.org/10.1186/s42269-024-01231-0 (Springer)
5. WHO Global Traditional Medicine Centre. (2025). About us. World Health Organization. (World Health Organization)
6. World Health Organization. (2025). Global traditional medicine strategy 2025–2034. World Health Organization. (World Health Organization)
7. Patel, R. K., Bharti, A. K., Patel, M., & Jangde, L. (2025). Explore traditional wound healing practices and medicinal plant use in Sarangarh tribal communities, Chhattisgarh. International Journal for Multidisciplinary Research, 7(3). https://doi.org/10.36948/ijfmr.2025.v07i03.44451
8. Patel, R. K. (2025). Biopriming of seeds with microbial consortia to enhance germination and early growth performance under saline stress conditions. International Journal of Research and Technology, 5(2), Part A.
9. Patel, R. K. (2025). Village pharmacopeia: Traditional medicinal plant use among rural communities in Raigarh district, Chhattisgarh. Journal of Scientific Research in Allied Sciences, 11(5), 633–648. https://www.jusres.com
10. Dr. Rajesh Kumar Patel, Prof. Dr. Ashok Kumar Bharti. (2025). Phytochemical Diversity of Medicinal Plants and Their Pharmacological Significance. International Journal of Advanced Research and Multidisciplinary Trends (IJARMT), 2(4), 01–12. Retrieved from https://ijarmt.com/index.php/j/article/view/514
11. Patel, R. K., & Bharti, A. K. (2025). Phytochemical profiling and screening of antimicrobial activity of weed in Raigarh, Chhattisgarh. Shodhshauryam International Scientific Refereed Research Journal, 8(4).