WJPMR, 2026, 12(5), 212-215 Research Article Impact Factor: 7.555

WORLD JOURNAL OF PHARMACEUTICAL AND MEDICAL RESEARCH

www.wjpmr.com

ISSN (O): 2455-3301
ISSN (P): 3051-2557
Coden USA: WJPMBB

EVIDENCE-BASED AYURVEDA: BRIDGING ANCIENT WISDOM WITH MODERN SCIENTIFIC VALIDATION

Dr. Rohit Ambodiya*[1], Dr Bharti Rajoriya[2], Dr Pratiksha Pingale[3] Dr R. K. Pati[4]

[1,2,3]Post Graduate Scholar, PG Department of Rasashastra Evum Bhaishajya Kalpana, Pt Khushilal Sharma Govt (Auto) Ayurveda College and Institute, Bhopal, Madhya Pradesh, India.
[4]Professor and HOD, PG Department of Rasashastra Evum Bhaishajya Kalpana, Pt Khushilal Sharma Govt (Auto) Ayurveda College and Institute, Bhopal, Madhya Pradesh, India.

***Corresponding Author: Dr. Rohit Ambodiya**

Post Graduate Scholar, PG Department of Rasashastra Evum Bhaishajya Kalpana, Pt Khushilal Sharma Govt (Auto) Ayurveda College and Institute, Bhopal, Madhya Pradesh, India.

DOI: https://doi.org/10.5281/zenodo.20020866

How to cite this Article: Dr. Rohit Ambodiya*[1], Dr Bharti Rajoriya[2], Dr Pratiksha Pingale[3] Dr R. K. Pati[4]. (2026). Evidence-Based Ayurveda: Bridging Ancient Wisdom with Modern Scientific Validation. World Journal of Pharmaceutical and Medical Research, 12(5), 212–215.

Article Received on 05/04/2026 **Article Revised on 25/04/2026** **Article Published on 05/05/2026**

ABSTRACT

Background: Ayurveda is one of the oldest systems of medicine, centered on maintaining health by balancing Doshas, Dhatus, and Agni (metabolic activity). In recent years, it has gained attention worldwide for its role in managing chronic diseases and promoting overall well-being. However, its wider acceptance in mainstream healthcare is still restricted due to limited high-quality scientific evidence. **Objective:** The present review attempts to examine the available scientific evidence on Ayurvedic medicines and therapies, identify existing challenges in research, and explore their relevance in the context of personalized healthcare. **Methods:** This narrative review is based on an analysis of published clinical studies, pharmacological research, and reports from recognized institutions. The focus was mainly on chronic conditions such as rheumatoid arthritis and metabolic disorders, along with commonly used classical formulations and therapeutic procedures. **Results:** A number of Ayurvedic formulations, including Chyawanprash, Arogyavardhini Vati, Ashwagandha, and Triphala, have shown encouraging results in terms of efficacy and safety. Similarly, therapies like Panchakarma, Kshara Sutra, Shirodhara, and leech therapy have demonstrated beneficial clinical outcomes. At the same time, several challenges remain, particularly due to the individualized nature of treatment, limitations of conventional trial methods, lack of measurable biomarkers, and concerns related to standardization. **Conclusion:** Ayurveda has the potential to contribute meaningfully to modern integrative healthcare. Strengthening research methodologies, improving standardization, and encouraging collaboration between traditional and modern sciences will be essential for its broader global acceptance.

KEYWORDS: Ayurveda, evidence-based medicine, personalized care, clinical trials, integrative research.

INTRODUCTION

Ayurveda, meaning science of life, is among the oldest Indian traditional healthcare systems, rooted in ancient culture. It traces its origins to sacred texts such as the Vedas, and its classical foundations are embodied in texts like *Charaka Samhita, Sushruta Samhita, and Ashtanga Hridaya.* These texts systematically outline principles of health, disease, prevention, and treatment, integrating physical, mental, and spiritual well-being. Ayurveda emphasizes personalized medicine, balancing bodily doshas, and holistic care, continuing to influence contemporary complementary and integrative medicine worldwide.[1,2,3,4,5] It conceptualizes health as a dynamic equilibrium among physiological principles, body tissues, metabolism, and the surrounding environment. Treatments are personalized based on an individual's constitution (*Prakriti*). Globally, Ayurveda is gaining attention for its potential in managing chronic diseases, promoting wellness, and complementing modern medicine.[6,7]

However, a major barrier to Ayurveda's integration into mainstream healthcare is the limited scientific validation within the framework of evidence-based medicine (EBM). EBM emphasizes rigorous clinical evaluation through randomized controlled trials (RCTs), systematic

reviews, and meta-analyses.[2,6] These approaches are difficult to apply in Ayurveda because its therapies often involve complex, multi-component formulations and personalized regimens that extend beyond conventional disease models.[1,8]

This review aims to summarize current progress in building an evidence base for Ayurvedic medicine, identify methodological challenges, highlight scientifically validated formulations and therapies, and propose strategies to integrate Ayurveda within predictive, preventive, and personalized medicine (PPPM) frameworks.[9,10]

NEED OF THE STUDY

Despite its long-standing tradition and wide clinical use over centuries, Ayurveda has yet to achieve full acceptance within mainstream global healthcare. One of the primary reasons for this is the limited availability of strong, high-quality scientific evidence. Modern medicine largely depends on standardized treatment protocols, randomized controlled trials (RCTs), and measurable biological markers. In contrast, Ayurveda follows a more individualized and holistic approach, based on concepts such as *Prakriti*, *Dosha*, *Agni*, and *Dhatu*, which are not easily assessed using conventional biomedical tools.

In recent years, interest in traditional and complementary systems of medicine has increased significantly across the world, particularly for managing chronic and lifestyle-related conditions such as rheumatoid arthritis, metabolic syndrome, stress-related disorders, and autoimmune diseases. However, the absence of well-documented clinical data, uniform research methodologies, and widely accepted validation standards has created a noticeable gap between traditional Ayurvedic knowledge and its scientific recognition.

In addition, several practical challenges continue to limit the integration of Ayurveda into evidence-based practice. These include inconsistencies in drug quality, lack of standardization in herbo-mineral formulations, a shortage of large multicentric clinical trials, and limited integration with emerging scientific fields such as genomics, metabolomics, and systems biology.

Given these concerns, there is a clear need to scientifically evaluate classical Ayurvedic formulations and therapies using modern research approaches, while also developing study designs that respect its personalized nature. Efforts should also focus on identifying reliable biomarkers for key Ayurvedic concepts, encouraging collaboration between traditional and modern medical sciences, and establishing standardized clinical and regulatory frameworks.

This study has been undertaken with the aim of addressing these gaps by reviewing existing scientific evidence, examining current challenges, and suggesting integrative approaches to position Ayurveda within the broader framework of evidence-based and personalized medicine.

METHODS

This narrative review was conducted through a comprehensive literature survey, including scientific papers, clinical trials, and reports from official Ayurveda research bodies such as the Central Council for Research in Ayurvedic Sciences (CCRAS). Data were obtained from PubMed Central, ScienceDirect, and institutional repositories.[6,10] The inclusion criteria were:

- Evaluation of classical Ayurvedic medicines via clinical and pharmacological studies.
- Compilation and analysis of randomized and observational trials.
- Examination of integrative, genomic, and epigenetic studies on Ayurvedic principles such as *Prakriti*.
- Review of methodological, knowledge, and regulatory challenges in evidence generation.
- Focus on therapies for chronic diseases including rheumatoid arthritis, metabolic syndrome, and infectious disorders.[1,6,10]

RESULTS

Classical Ayurvedic Formulations: Scientific Validation

Several classical formulations have been studied for safety and efficacy:

- ***Chyawanprash*:** Made from *Amla* (*Emblica officinalis*) and other herbs, it has demonstrated immune-boosting and antioxidant effects, reduced recurrent respiratory infections and improved general well-being.[1,11]
- ***Arogyavardhini Vati*:** Traditionally prescribed for liver and cardiovascular ailments, studies report improved lipid and glucose profiles without significant adverse effects.[2,6] ***Ashwagandha (Withania somnifera):*** Extensively evaluated through RCTs, it shows strong evidence for stress reduction, anxiolytic effects, and improved quality of life.[7,12]
- ***Triphala*:** A blend of *Amalaki*, *Bibhitaki*, and *Haritaki*, it exhibits antioxidant, digestive, and possible anti-carcinogenic effects.[8,11]

Clinical Trials of Ayurvedic Treatments

Evidence from modern clinical trials is expanding:

- A double-blind RCT comparing Ayurvedic therapy with methotrexate for rheumatoid arthritis found equivalent or better outcomes with fewer side effects.[6,10]
- Trials on osteoarthritis patients showed comparable pain relief to NSAIDs and glucosamine, with improved safety profiles.[2,7]
- Studies on Ayurvedic dermatological formulations using *Neem*, *Turmeric*, and *Sandalwood* etc demonstrated benefits in acne, eczema, and psoriasis management.[1,12]

Ayurvedic Therapies: Scientific Insights

Ayurvedic Therapy	Description	Reported Benefits	Evidence / Recognition
Panchakarma	Detoxification and rejuvenation involving five purification methods.	Enhances immune function and metabolic balance.	Observational studies show measurable physiological benefits.[8,10]
Kshara Sutra Therapy	Medicated thread for anal fistula treatment.	High success rates, minimal complications, faster healing.	Validated by clinical reviews; approved by US FDA.[2,10]
Shirodhara & Massage Therapies	Oil pouring and massage for mind-body relaxation.	Reduces stress, improves sleep, and supports mental health.	Experimental studies confirm psychophysiological benefits.[1,11]
Leech Therapy (Jalaukavacharana)	Medicinal leech application for detoxification and bloodletting.	Enhances circulation, relieves venous and inflammatory disorders.	Supported by modern scientific studies and regulatory recognition.[6,10]

Challenges in Evidence Generation for Ayurveda

Evidence generation for Ayurveda faces multiple obstacles due to philosophical and methodological differences from biomedicine. Ayurveda's holistic and individualized framework contrasts with the reductionist, single-agent approach of modern clinical research.[2,6] The *Prakriti*-based personalization complicates standardization, and suitable biomarkers for concepts like *dosha* imbalance or *Agni* are still limited.[7,9] The scarcity of large-scale RCTs and meta-analyses further restricts robust evidence synthesis.[1,10] Quality control, formulation standardization, and reproducibility issues add to regulatory and methodological challenges.[6,8]

Emerging Research and Integrative Approaches

Recent developments bridge Ayurveda and modern science through fields such as Ayugenomics and Pharmacogenomics, which link *Prakriti* types to genetic and metabolic markers.[7,9] Innovative methodologies like Bayesian models and N-of-1 trials are proposed for studying personalized interventions.[6] International initiatives, including Horizon 2020, promote integration of Ayurveda into the broader PPPM paradigm.[9,10]

Government and institutional support are also expanding. The Ministry of Ayush and ICMR have launched initiatives to strengthen Ayurveda's scientific foundation, develop Ayurveda-specific Good Clinical Practice (GCP) guidelines, and implement digital decision-support tools such as AyuSoft.[10,13] Standardized reporting protocols based on CONSORT are being adapted to ensure transparency, reproducibility, and global credibility in Ayurvedic research.[8,10]

DISCUSSION

The progress of evidence-based Ayurveda shows a hopeful trend toward worldwide acceptance of this ancient system through scientific validation. Classical formulations like *Chyawanprash Triphala churna*, Panchakarma, etc have strong evidence, linking traditional use with clinical outcomes. Rigorous trials that compare Ayurveda to standard drug therapies for autoimmune and degenerative diseases have provided considerable evidence of effectiveness, along with fewer negative effects.

Despite this progress, differences in understanding between Ayurveda and modern science present a key difficulty. Ayurveda's personalized and holistic view of patient care requires research designs that extend beyond typical randomized controlled trial (RCT) frameworks. Adding pragmatic trials, observational cohorts, and systems biology methods to traditional RCT models will better capture Ayurveda's complex interventions.

Combining Ayurveda with genomics and metabolomics research shows promise for merging ancient wisdom with molecular science. This supports tailored therapies that align with new ideas in personalized medicine. Government and institutional research programs have started to foster a collaborative culture and lay the groundwork for this integration.

For Ayurveda to achieve its full potential as an evidence-based medical system, it must address challenges in standardization, clinical documentation, regulatory consistency, and education reform. Emphasizing quality control, validating through interdisciplinary research partnerships, and promoting dialogue between Ayurvedic practitioners and biomedical researchers will help reduce scepticism and increase acceptance.

CONCLUSION

Ayurveda, based on holistic principles and personalized care, is transforming into an evidence-based medical system. Classical formulations and therapies show promising effectiveness and safety confirmed by careful scientific study. New methods and integration with predictive, preventive, and personalized medicine frameworks put Ayurveda in a strong position for worldwide acceptance. Ongoing, cooperative research that uses sensitive methods tailored to Ayurveda's complexity is essential to fully realize its potential. This will ensure that Ayurveda plays a meaningful role as a complementary and integrative medicine in modern healthcare, preserving the timeless wisdom of ancient knowledge alongside the rigor of contemporary science.

REFERENCES

1. Patwardhan B. Bridging Ayurveda with evidence-based scientific approaches in medicine. EPMA J., Nov. 1, 2014; 5(1): 19. doi: 10.1186/1878-5085-5-19. PMID: 25395997; PMCID: PMC4230501.
2. Narayana DBA, Durg S. Ayurveda: (W)here is the evidence. J Ayurveda Integr Med., Apr-Jun., 2021; 12(2): 408-411. doi: 10.1016/j.jaim.2020.07.001. Epub 2020 Sep 17. PMID: 32951967; PMCID: PMC8185965.
3. Shastri KN, Chaturvedi GN, editors. Charaka Samhita of Agnivesha, Vidyotini Hindi Commentary. Revived edition. New Delhi: Chaukhambha Bharati Academy, 2020. ISBN 978-93-84541-29-3.
4. Tripathi B. Ashtang Hridaya. Reprinted edition. Varanasi: Chaukhambha Sanskrit Pratishthan, 2017. ISBN 978-81-7084-125-8.
5. Shastri A. Sushruta Samhita with Ayurveda Tattva Sandipika. Revised edition. Varanasi: Chaukhambha Sanskrit Pratishthan, 2013.
6. S. G and Megha In pursuit of evidence: A need to transform Ayurvedic education Journal of Ayurveda and Integrative Medicine, 2025; 16: 101110. https://doi.org/10.1016/j.jaim.2024.101110
7. Patwardhan et al. Evidence-based traditional medicine for transforming global health and well-being. Natl Med J India., 2023; 36: 345–50. DOI: 10.25259/NMJI_825_2023]
8. Evidence-Based Ayurveda. *Patanjali Research Foundation* [Internet]. Available from: https://patanjali.res.in/assets/img/Book_Evidence-Based-Ayurveda.pdf
9. Narayana DBA, Durg S. Ayurveda: (W)here is the evidence. J Ayurveda Integr Med., Apr-Jun., 2021; 12(2): 408-411. doi: 10.1016/j.jaim.2020.07.001. Epub 2020 Sep 17. PMID: 32951967; PMCID: PMC8185965.
10. Evidence Base of Ayurveda. *Central Council for Research in Ayurvedic Sciences (CCRAS)* [Internet]. Available from: https://ccras.nic.in/wp-content/uploads/2024/06/Evidence-Base-of-Ayurveda.pdf
11. Ayurvedic Medicine: In Depth. *National Center for Complementary and Integrative Health (NCCIH)* [Internet]. Available from: https://www.nccih.nih.gov/health/ayurvedic-medicine-in-depth
12. Powerful Ayurvedic Herbs and Spices with Health Benefits. *Healthline* [Internet]. Available from: https://www.healthline.com/nutrition/ayurvedic-herbs
13. Ministry of Ayush and ICMR to Host National Seminar on "Evidence-Based Ayurveda." *Press Information Bureau (PIB)* [Internet]. Available from: https://www.pib.gov.in/PressReleasePage.aspx?PRID=2182157