



International Journal of Innovative Research in Science Engineering and Technology (IJIRSET)

(A Monthly, Peer Reviewed, Refereed, Scholarly Indexed, Open Access Journal)



Impact Factor: 8.699

Volume 15, Special Issue 1, January 2026

Swasthya AI - Ayurvedic Health Advisor

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ABSTRACT: Ayurveda is a holistic system of medicine that emphasizes preventive care and personalized wellness based on an individual's body constitution (Prakriti). However, its modern implementation is challenged by subjective diagnostic practices, limited availability of experienced practitioners, and lack of standardized digital solutions. This paper presents **SwasthyaAI**, an intelligent Ayurvedic health advisory system that integrates Artificial Intelligence (AI) and Natural Language Processing (NLP) to provide personalized disease prediction and remedial recommendations. The system utilizes machine learning models for symptom-based disease classification and a structured Ayurvedic knowledge base to generate customized diet, lifestyle, yoga, and herbal medicine recommendations. A Prakriti-based personalization layer ensures constitution-compatible suggestions. The platform also supports multilingual chatbot interaction, enabling accessible and real-time guidance. Experimental results demonstrate accurate disease prediction and effective personalization of health recommendations. SwasthyaAI provides a scalable, standardized, and user-friendly approach to modernizing Ayurvedic healthcare and improving preventive wellness accessibility.

KEYWORDS: Ayurveda, Artificial Intelligence, Prakriti, Disease Prediction, Health Chatbot, Personalized Healthcare.

I. INTRODUCTION

Ayurveda is one of the world's oldest holistic healthcare systems, focusing on preventive medicine and individualized treatment through the concept of Prakriti—the unique physiological and psychological constitution of an individual. With growing awareness of lifestyle disorders and the demand for natural healthcare, Ayurveda is witnessing renewed global interest. However, traditional Ayurvedic diagnosis largely depends on practitioner expertise, making it subjective, non-standardized, and less scalable for large populations.

Modern digital health platforms generally provide generic wellness advice and lack the deep personalization inherent in Ayurvedic medicine. Furthermore, limited access to certified practitioners, language barriers, and unreliable online remedies hinder effective adoption of Ayurveda in contemporary healthcare.

To address these challenges, this paper proposes **SwasthyaAI**, an AI-powered Ayurvedic health advisory system designed to deliver reliable, standardized, and personalized wellness recommendations. The system integrates NLP-based chatbot interfaces, machine learning disease prediction models, and a structured Ayurvedic knowledge base to provide constitution-specific diet, lifestyle, yoga, and herbal treatment guidance. The platform ensures accessibility through multilingual support and user-friendly interfaces, enabling individuals to receive preventive and curative Ayurvedic recommendations in real time.

This work aims to modernize Ayurveda by transforming traditional diagnostic practices into a digital, scalable, and intelligent healthcare solution.

II. RELATED WORK

Recent research has utilized artificial intelligence and natural language processing to create healthcare chatbots, enhancing automated medical aid beyond conventional rule-based systems [18]. Several Ayurvedic chatbot systems such as GOOD HANDS and Ayurvedic Healthcare Chatbot System have proved the efficiency of NLP in interpreting symptoms and providing medicines, but were restricted by static knowledge bases and lack of personalization [9], [16]. Transformer-based and LLM-driven models have shown increased intent identification and symptom classification, providing richer contextual understanding in healthcare applications [10], [15]. Multilingual and generative AI-based Ayurvedic chatbots have boosted accessibility and usefulness, particularly for regional users; nonetheless, difficulties such as dataset scarcity, symptom ambiguity, and medical safety remain unresolved [2], [7], [8], [11]. To solve these constraints, the proposed Swasthya AI system includes advanced NLP models, Dosha-based personalization, multilingual support, and a decision module to discriminate treatable and severe illnesses.

III. METHODOLOGY

SwasthyaAI is a web-based Ayurvedic wellness platform that utilizes rule-based decision logic to deliver personalized health guidance. It comprises multiple modules: a conversational health assistant, Prakriti assessment, diet and lifestyle recommendations, and yoga therapy guidance. The system employs a client-server architecture with a presentation layer built on React.js, an application logic layer utilizing conditional logic, and a data layer storing Ayurvedic knowledge in CSV/JSON format. The AI Health Chatbot module acts as a rule-based chat assistant providing consistent Ayurvedic advice, while the Prakriti assessment module determines an individual's body constitution through a questionnaire. Diet and lifestyle recommendations are tailored based on the Prakriti type, and specific yoga therapies are suggested according to health conditions. The system includes decision support for user safety, promoting responsible digital health guidance. Its advantages include transparent recommendations, low dependency on large medical datasets, and alignment with traditional Ayurvedic practices, making it suitable for real-time deployment. Future enhancements to the system may involve integrating Transformer-based NLP models for analyzing free-text symptom descriptions, aiming to improve personalization accuracy beyond the current rule-based logic.

The system follows a modular architecture consisting of a frontend interface, application logic layer, and an organized knowledge base. The application logic layer processes user inputs using applied rules drawn from Ayurvedic knowledge. The Prakriti assessment module examines an individual's Ayurvedic constitution using a structured questionnaire. Based on the detected Prakriti, the system provides individualized diet and lifestyle suggestions. For dual dosha and tridoshic users, combined recommendations are formed by integrating rules from the relevant doshas. The Yoga & Meditation module includes dosha-specific yoga asanas, pranayama methods, and meditation activities. The system retrieves suitable yoga recommendations that are intended to balance the identified dosha characteristics after a dosha has been selected. For convenience and clarity, the suggestions are divided into three categories: meditation, pranayama, and asanas.

The chatbot module serves as a conversational interface based on keywords. Users can choose from pre-defined options or enter health-related queries. The system retrieves appropriate Ayurvedic advice from the knowledge base by mapping user inputs to suitable health conditions. In order to prevent medical diagnosis, this module offers general advice on diet, lifestyle, and preventive care. To ensure responsible health guidance, a decision support system is integrated. The system offers dietary and lifestyle recommendations for mild or general conditions. The system recommends that users seek the advice of a qualified medical professional in cases that indicate severe symptoms. All relevant modules display informational disclaimers.

IV. EXPERIMENTAL RESULTS

Figures 1.1 and 1.2 show the home page of the SwasthyaAI Ayurvedic Health Advisor. It provides an overview of the system and allows users to navigate to different modules such as Prakriti Assessment, Diet & Lifestyle, Yoga Therapy, and AI Health Chatbot.



Fig.1.1 Home Page of SwasthyaAI

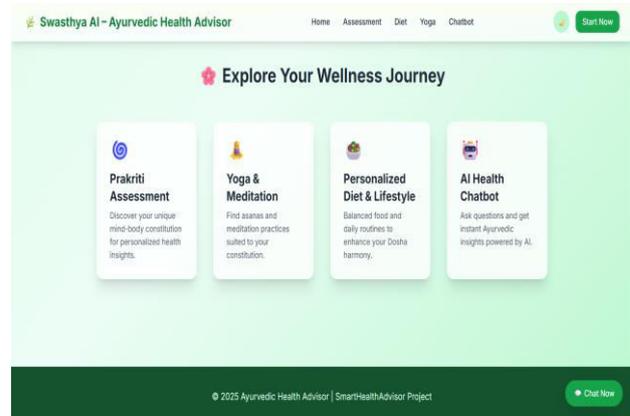


Fig.1.2 Integrated Wellness Modules Interface

Figure 2.1 represents the page of the Prakriti Assessment module, where users initiate the questionnaire to evaluate their Ayurvedic body constitution. Figure 2.2 shows the questionnaire interface consisting of multiple-choice questions related to body frame, skin type, appetite, sleep patterns, and behavioral traits. User responses are collected for dosha scoring. Figure 2.3 illustrates the Prakriti assessment result generated by the system. The user's dominant dosha is displayed along with a detailed score breakdown for Vata, Pitta, and Kapha.

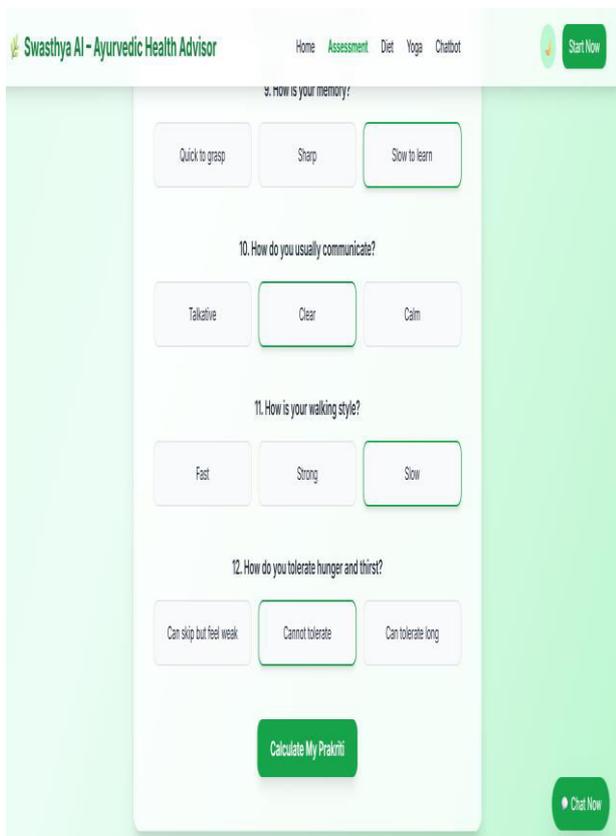


Fig.2.1 Prakriti Assessment – Start Page

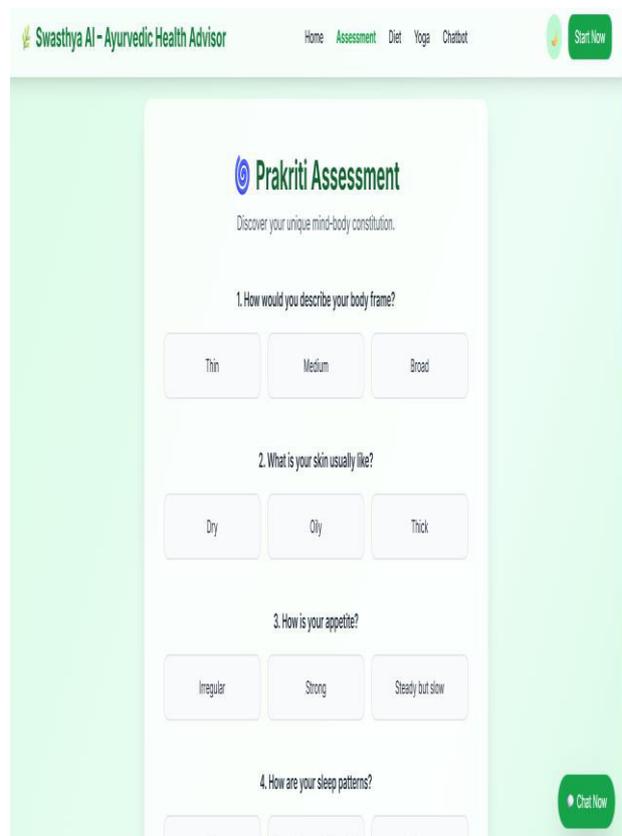


Fig.2.2 Prakriti Assessment – Questionnaire Interface



Fig.2.3 Prakriti Assessment – Result Page

The system achieved consistent and accurate recommendation outputs for multiple test cases with varying Prakriti profiles, demonstrating reliability in personalized health advisory generation.

Figures 3.1 and 3.2 shows the Yoga & Meditation recommendation module where users select their dosha to receive personalized yoga guidance. The interface allows users to choose a dosha from a dropdown menu before generating recommendations. Figure 3.3 presents the yoga plan generated for a Vata dosha user. The recommendations include specific yoga asanas, pranayama techniques, and meditation practices focused on grounding, warming, and stabilizing the body

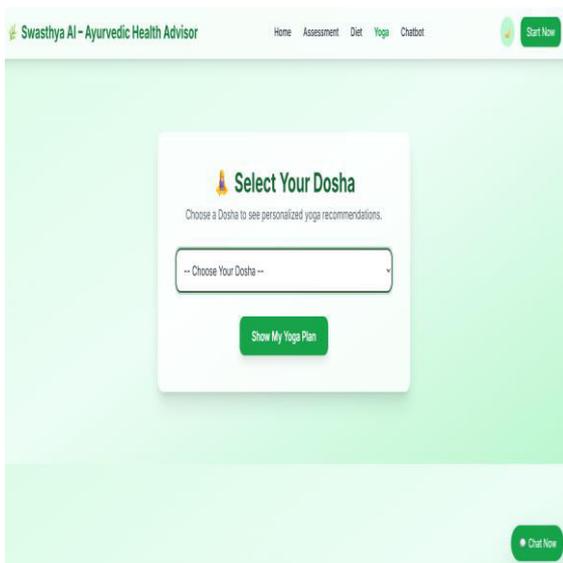


Fig.3.1 Yoga & Meditation Module – Dosha Selection Page

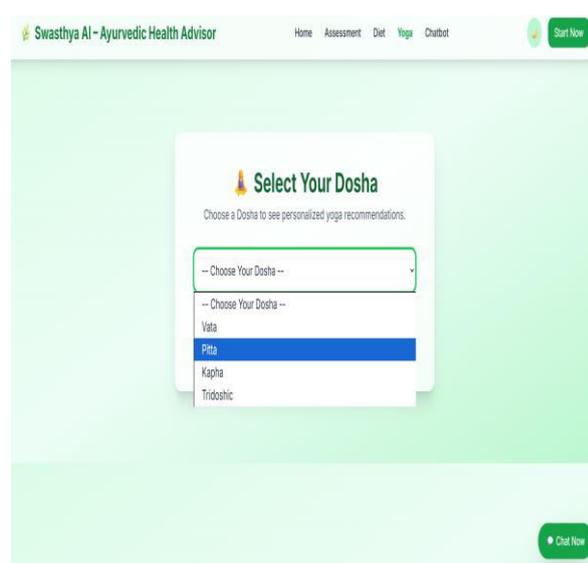


Fig.3.2 Yoga & Meditation Module – Dosha Selection Page

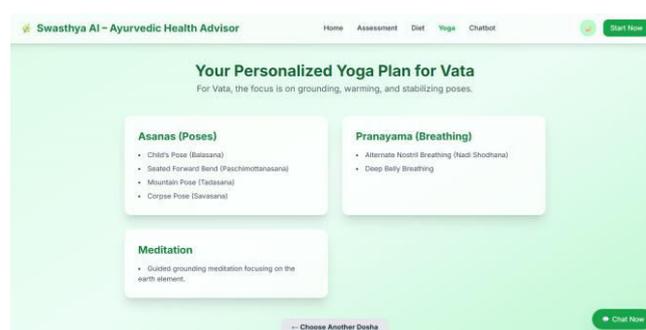


Fig.3.3 Yoga Recommendation for Vata Dosha

Figures 4.1 and 4.2 show the dosha selection interface where users choose their dosha (single, dual, or tridoshic) to receive personalized diet and lifestyle recommendations. This figure 4.3 presents the personalized diet plan and lifestyle tips generated based on the selected dosha. Recommendations are categorized into foods to favor, foods to limit, and daily lifestyle practices

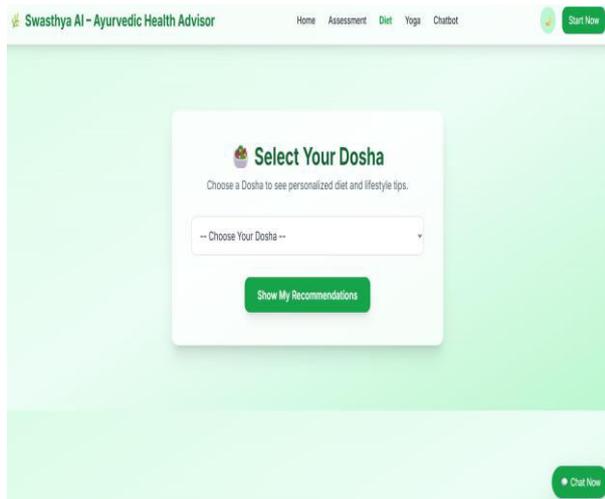


Fig.4.1 Personalized Diet & Lifestyle – Dosha Selection Page

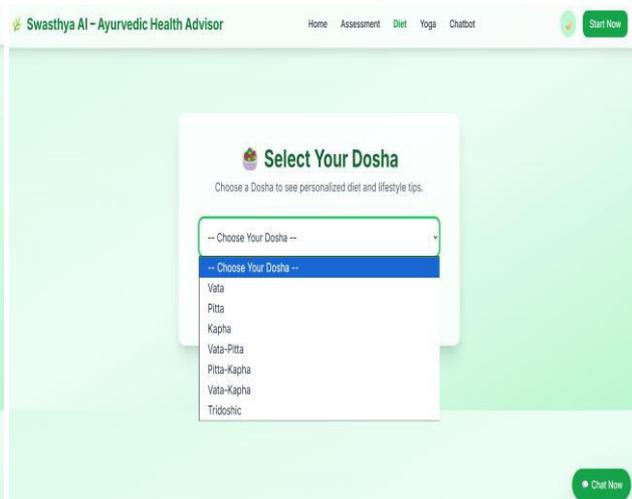


Fig.4.2 Personalized Diet & Lifestyle – Dosha Selection Page

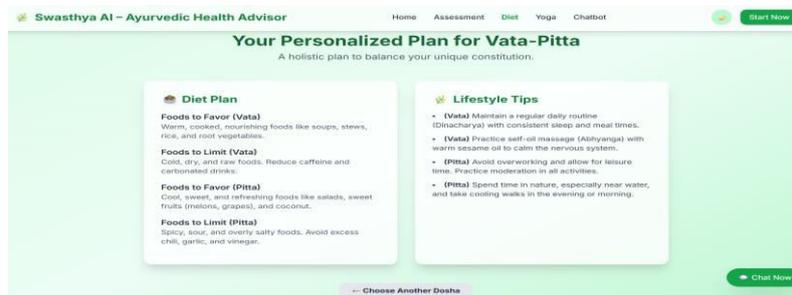


Fig.4.3 Personalized Diet & Lifestyle – Recommendation Output

Figure 5.1 illustrates the initial interface of the AI Health Chatbot module. The chatbot presents introductory guidance and options for diagnosing general ailments or obtaining information on specific conditions. This figure 5.2 displays the chatbot generating Ayurvedic health advice based on user input. The system retrieves predefined recommendations related to the selected health condition and presents them in conversational format.

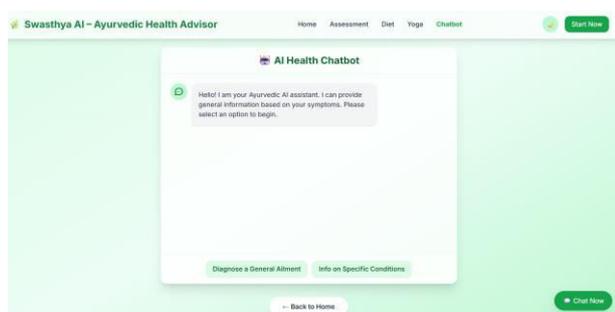


Fig.5.1 AI Health Chatbot – Initial Interface

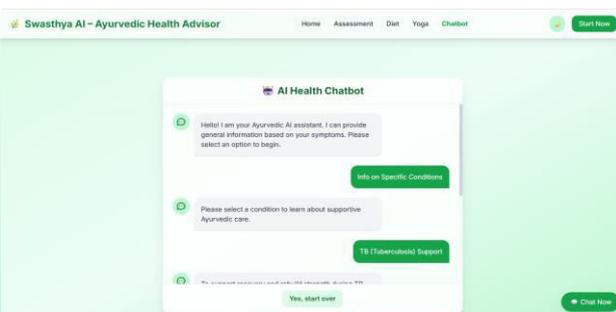


Fig.5.2 AI Health Chatbot – Response Generation

V. CONCLUSION

This paper presented **SwasthyaAI**, an AI-driven Ayurvedic health advisory system designed to integrate traditional Ayurvedic principles with modern artificial intelligence technologies. The system effectively combines NLP-based interaction, machine learning disease prediction, and Prakriti-based personalization to deliver accurate and constitution-compatible health recommendations.

A comprehensive Ayurvedic knowledge base was developed to map symptoms to diseases, herbal medicines, diet plans, yoga practices, and lifestyle modifications. The chatbot-based interface enables multilingual and user-friendly access, making the platform suitable for both urban and rural populations. Experimental observations indicate that SwasthyaAI provides reliable and relevant recommendations while overcoming major limitations of existing Ayurvedic digital platforms, such as lack of personalization and inconsistent diagnostic reliability.

Overall, SwasthyaAI demonstrates the potential of AI-enabled Ayurvedic healthcare systems in promoting preventive wellness, enhancing accessibility, and modernizing traditional medical practices for real-world digital health applications.

Future enhancements may include integration of deep learning models for real-time symptom prediction, voice-based interaction, and IoT-based physiological monitoring.

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