Proposal: Desh Ka Prakriti Parikshan: A Public Health Initiative for Personalized Wellness and Preventive Care

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Background

The **"Desh Ka Prakriti Parikshan"** initiative is a collaborative effort by the **National Commission for Indian System of Medicine (NCISM)** and the **Ministry of AYUSH** to promote Ayurveda-based personalized health and wellness practices at a national level. This landmark project seeks to leverage the Ayurvedic concept of **Prakriti** (individual constitution) as a foundation for preventive healthcare and lifestyle management.

Recognizing the importance of integrating traditional wisdom with modern technology and research, the **Ayurgenomics Unit at CSIR-IGIB** was approached to provide technical support in developing a dedicated mobile application. This app is being designed for practitioners of the **Indian Systems of Medicine (ISM)** to systematically collect, analyze, and interpret Prakriti-related data. Such an approach aligns with CSIR's broader commitment to societal initiatives that bridge traditional knowledge systems with cutting-edge scientific tools.

The project builds on the **Prakriti questionnaire tool**, developed and validated by CSIR-IGIB's Ayurgenomics Unit, as the primary mechanism for collecting constitution-specific data. Through this initiative, the Ministry of AYUSH aims to create a large-scale sensitization campaign, fostering awareness about the role of personalized healthcare in improving societal well-being.

The first phase of the project will span from **November 25 to December 25, 2024**, during which the goal is to perform the maximum number of Prakriti assessments, setting global benchmarks and records in the process. Following this initial phase, the mobile application will remain accessible to the Ayurveda fraternity and practitioners nationwide, enabling continuous **Prakriti analysis**, lifestyle recommendation generation, and the promotion of personalized health and wellness practices.

This initiative represents a significant step in integrating Ayurveda into mainstream public health systems and advancing preventive healthcare through the synergy of traditional and modern scientific approaches.

Objectives

1. Develop and deploy a mobile application
2. Capacity Building Through online and offline training and workshops for Ayurveda volunteers, educators, and students
3. Public Health Awareness and Sensitization about personalized health and wellness
4. Data Collection and Nationwide Health Profiling

5. Refine Prakriti prediction models through large-scale, multi-variable data analysis and promote evidence-based Ayurveda practices via impactful research and publications.

Methodology

1. Mobile App Development and Implementation

- **Integration of the questionnaire:** Refine and incorporate the validated Prakriti assessment tool within the app, designed for intuitive user interaction.
- **Digital health guidance:** Offer personalized lifestyle and dietary recommendations through user-friendly app notifications and digital Prakriti cards.

2. Training and Capacity Building

- **Development of modules:** Create instructional materials for app usage, questionnaire administration, and ethical data collection practices.
- **Volunteer engagement:** Train volunteers to develop their skills in Traditional knowledge based clinical methods and act as Ayurveda ambassadors, sensitizing communities about personalized health and preventive care.
- **Training and problem-solving sessions:** Organize regular training sessions for Ayurveda students, educators, and healthcare professionals to address the technical and practical challenges involved in administering questionnaires and implementing the initiative.

3. Public Engagement and Campaigns

- **Content creation and technical support**: Develop and maintain engaging and scientifically accurate content for the campaign website. The content will emphasize the significance of Prakriti-based personalized health and wellness, provide detailed guidance on app usage and Prakriti assessments, and include access to scientific research publications and study materials for volunteers to enhance their understanding and engagement.
- **Awareness drives:** Organize community camps at CSIR institutes and other public locations to promote app usage and conduct Prakriti assessments, followed by personalized lifestyle recommendations. These drives will also aim to actively engage a diverse audience, including members of the scientific community, to foster interdisciplinary collaboration and broader awareness of Ayurveda's integration with modern health approaches.
- **Ethical data collection:** The project has been ethically approved by Guru Ravidas Ayurved University, Punjab, ensuring strict adherence to privacy and security protocols for collected data. Integration of informed consent form and other mechanisms within the app guarantees transparency and user rights.

4. Data Analysis and Research

- **Repository creation:** Compile a comprehensive database of Prakriti distributions, facilitating advanced research in Ayurveda and public health.
- **Research integration:** Utilize anonymized data to improve ML algorithms and contribute to the scientific validation of Ayurveda-based interventions.

Expected Outcomes

- A repository of data reflecting diverse Prakriti distributions, providing insights into public health trends and regional predispositions.
- Increased awareness and adoption of personalized health practices, enhancing community health and reducing the burden of lifestyle diseases.
- Refined algorithms and improved digital tools for Ayurveda-based assessments, bridging traditional knowledge with modern scientific methodologies.
- Promoted preventive care and personalized wellness, fostering a healthier society and empowering individuals with knowledge for informed health decisions.

Conclusion

The "Desh Ka Prakriti Parikshan" initiative exemplifies a collaborative effort of CSIR-IGIB with NCISM and Ministry of AYUSH to integrate the concept of Prakriti with modern technology for societal betterment. By aligning with AcSIR's societal outreach objectives, this project aims at large scale sensitization of the public about the importance of personalised medicine and preventive care.

Quantifiable Parameters: Students taking up this project as their CSIR-800 project will have to compulsorily take up tasks and submit reports based on the following quantifiable parameters:

- Participation in app development in collaboration with NCISM.
- Design, deployment and integration of digital Prakriti certificate in the app.
- Preparation of personalized health recommendation materials.
- Development of campaign website content and scientific reading materials on Prakriti and Ayurgenomics.
- Preparation of IEC materials/PPTs for volunteers and citizens.
- Participation in sensitization and training workshops.
- Conducting Prakriti analysis during camps, targeting approximately 50 assessments per student using the app.
- Analysis of Prakriti phenotypes based on age, gender, and geographical location.

- Compilation and interpretation of data from app-based Prakriti assessments for further insights.

These quantifiable parameters can be undertaken by AcSIR students with different backgrounds according to their expertise and/or choice as indicated below:

Physicians/Medical Professionals/ Life science

1. Collaborate on community engagement strategies to encourage app adoption and awareness of Prakriti-based health practices.
2. Conduct Prakriti assessments for at least 50 individuals using the app during community camps or outreach activities
3. Participate in data collection and Prakriti assessments with Physicians.
4. Develop and communicate detailed lifestyle and dietary recommendations based on Prakriti and time, age, environment, ensuring the practical applicability of these recommendations for diverse populations.
5. Sensitize people about Ayurveda and its personalised approach in predictive and preventive care through scientific literature and evidence. For example, importance of physical activity , proper sleep, balanced diet etc.
6. Creation of Infographic material, educational content, presentations and videos for public sensitisation and engagement.

Bioinformatics / IT / CS and Technology

1. Analyze Prakriti phenotype data collected from diverse demographics, focusing on patterns based on age, gender, and geographic distribution.
2. Generate insights into Prakriti variability and its correlation with regional health trends or disease predispositions.
3. Enhance machine learning models for Prakriti prediction by integrating multi-variable data analysis.
4. Implement newer AI/ML methodologies to enhance prediction accuracy and scalability of prakriti analysis for diverse population and age groups.
5. Develop tools or scripts for efficient data visualization and writing popular science articles.
6. Record/ edit podcasts, videos of citizens on feedback and outcomes of prakriti based healthy lifestyle recommendations.