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Prakriti (constitution)-based personalized medicine: A critical review of diagnostic correlations between nadi pariksha (pulse diagnosis) and genotypic variations

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Abstract

Background: Ayurveda's concept of Prakriti (constitution)—the unique constitutional makeup of an individual—forms the foundation of personalized medicine within traditional Indian healthcare systems. This framework emphasizes biological individuality through the tridoshic model (Vata, Pitta, Kapha), aligning closely with modern notions of genetic variability and phenotypic expression. Nadi Pariksha (pulse diagnosis) (pulse examination), a classical diagnostic method, is traditionally used to infer Prakriti (constitution) and disease states, yet its clinical reliability and correlation with molecular data remain underexplored.

Objective: This review critically examines classical Ayurvedic literature and contemporary empirical studies to evaluate diagnostic correlations between Prakriti (constitution), Nadi Pariksha (pulse diagnosis), and emerging genomic and phenotypic data. It further aims to identify gaps, assess diagnostic reproducibility, and propose directions for standardization and integration into global personalized medicine frameworks.

Methods: A structured literature review was conducted using data from PubMed, Scopus, AYUSH Research Portal; and Google Scholar (1994-2024). Sources included classical Ayurvedic texts (Charaka Saṃhitā, Suśruta Saṃhitā), clinical studies on Prakriti (constitution)-genomics; and technological analyses of Nadi Pariksha (pulse diagnosis). Studies were included if they demonstrated measurable correlations between Prakriti (constitution) or Nadi and physiological, genotypic, or metabolomic parameters. Data synthesis employed descriptive and concordance analyses to assess diagnostic validity.

Results: Evidence from 33 studies revealed consistent correlations between Prakriti (constitution) types and selected genomic and physiological markers ($p < 0.05$), supporting Ayurveda's biological plausibility in personalized medicine. However, Nadi Pariksha (pulse diagnosis) demonstrated only fair-to-moderate diagnostic agreement ($\kappa = 0.3$-0.5) with questionnaire-based Prakriti (constitution) assessment, indicating subjectivity and lack of methodological standardization. Instrument-assisted pulse analysis improved reproducibility, suggesting that digital integration could bridge classical diagnostics and modern biomedical validation.

Conclusion: Prakriti (constitution)-based personalized medicine offers a promising framework for integrating Ayurveda with genomic science. While Prakriti (constitution) classification shows emerging molecular substantiation, Nadi Pariksha (pulse diagnosis) requires further standardization, digital augmentation; and multicentric validation to function as a reliable front-end diagnostic tool. A hybrid diagnostic model combining Nadi, structured Prakriti (constitution) assessment; and molecular profiling could redefine evidence-based integrative medicine, supporting Ayurveda's global repositioning as a scientifically grounded, personalized healthcare system.

Keywords: Prakriti (constitution)-based personalized medicine, Nadi Pariksha (pulse diagnosis), Ayurgenomics, integrative medicine, tridosha theory, Ayurveda diagnostics, precision medicine, phenotypic variation

Introduction

The concept of Prakriti (constitution)-based personalized medicine in Ayurveda posits that inter-individual variation in physiology, disease susceptibility; and therapeutic response is rooted in a person's constitutional makeup (Prakriti (constitution)), which is determined at conception and remains relatively stable throughout life, offering a framework surprisingly consonant with modern ideas of precision medicine and systems biology [1-3]. Classical texts such as Charaka Saṃhitā and Suśruta Saṃhitā describe Prakriti (constitution) in terms of

Vata, Pitta and Kapha dominance and recommend differential diet, lifestyle and therapeutic regimens based on these phenotypes, suggesting an early form of stratified healthcare [4, 5]. Contemporary work by Indian biomedical researchers has begun to correlate Prakriti (constitution) phenotypes with genomic, epigenetic, HLA and metabolomic signatures, indicating that Kapha-dominant individuals may show distinct inflammatory or metabolic tendencies, while Pitta or Vata types may differ in drug-metabolizing or stress-response pathways, thereby giving biological plausibility to Ayurvedic constitutional typing in the era of genomics [6-9]. However, Nadi Pariksha (pulse diagnosis) (pulse examination)—a key Ayurvedic diagnostic tool that claims to infer doshic states and even Prakriti (constitution) through radial arterial palpation—remains methodologically under-validated, with wide practitioner-dependent variability and limited standardized correlational studies with objective biomarkers or genotypic data, creating a diagnostic bottleneck for the globalization and clinical acceptance of Ayurveda-based personalized care [10-12]. The problem, therefore, is that while Prakriti (constitution) analysis has begun to receive molecular support, Nadi Pariksha (pulse diagnosis)—often used as its rapid, non-invasive proxy in clinics—has not yet been rigorously mapped to phenotypic or genotypic variations, making it difficult to defend its use before regulatory, academic, or integrative-medicine forums [13, 14]. Against this backdrop, this study aims;

1. To synthesize classical descriptions of Prakriti (constitution) assessment and Nadi Pariksha (pulse diagnosis) from Bṛhattrayī sources and later Ayurvedic diagnostic compendia,
2. To critically appraise modern empirical studies that have attempted to link Prakriti (constitution) with genomic, transcriptomic, proteomic or metabolomic profiles; and
3. To evaluate whether Nadi Pariksha (pulse diagnosis), in its current heterogeneous forms, can be positioned as a reliable, reproducible; and scalable gateway test for Prakriti (constitution)-centric precision Ayurveda within integrative and global health settings [15-18].

On this basis, the hypothesis of this review is that: if Prakriti (constitution) types identified through standardized Nadi Pariksha (pulse diagnosis) show consistent associations with specific genotypic or molecular patterns reported in Prakriti (constitution)-omics studies, then Nadi Pariksha (pulse diagnosis) can be operationalized as a clinically acceptable, low-cost front-end diagnostic method for Prakriti (constitution)-based personalized medicine; if not, methodological refinement, device-assisted pulse analysis; and composite diagnostic models (Prakriti (constitution) questionnaire + Nadi + phenotypic metrics) will be required before such claims can be mainstreamed in integrative medicine and international Ayurveda research [19-21].

Materials and Methods

Materials

This critical review employed a structured and integrative methodology designed to synthesize classical Ayurvedic concepts of Prakriti (constitution) and Nadi Pariksha (pulse diagnosis) with emerging genomic and phenotypic data. Primary classical sources included Charaka Saṃhitā, Suśruta Saṃhitā; and Ashtanga Hridaya, with verified English translations by Sharma (2014) and Bhishagratna (2010) serving as canonical references for Ayurvedic theory on Tridosha, Prakriti (constitution); and diagnostic principles [4, 5]. Secondary materials were retrieved from peer-reviewed biomedical and interdisciplinary journals such as Journal of Ayurveda and Integrative Medicine, Evidence-Based Complementary and Alternative Medicine, Frontiers in Genetics; and Journal of Translational Medicine, covering the period from 1994 to 2024. Inclusion criteria comprised studies that explored correlations between Prakriti (constitution) classification and genotypic, transcriptomic, proteomic, or metabolomic markers [6-9, 15-17]. Additionally, publications that evaluated methodological and technological aspects of Nadi Pariksha (pulse diagnosis), including its psychophysiological correlates and the development of instrument-assisted pulse analysis systems, were incorporated [10-14]. Global health policy documents, notably the WHO Traditional Medicine Strategy 2014-2023, were examined to contextualize integrative and globalization perspectives [18, 19]. Exclusion criteria eliminated non-peer-reviewed or anecdotal literature lacking empirical rigor. Bibliographic searches were performed through PubMed, Scopus, AYUSH Research Portal; and Google Scholar using key terms: “Prakriti (constitution), ” “Ayurgenomics, ” “Nadi Pariksha (pulse diagnosis), ” “Ayurvedic diagnostics, ” “genomic correlation, ” and “integrative medicine.” Cross-referencing ensured inclusion of studies linking Ayurvedic phenotype classifications to biological variability [1-3, 9].

Methods

A systematic review protocol was adopted following PRISMA guidelines adapted for interdisciplinary Ayurvedic research [15-17]. Data extraction was carried out by screening full texts for methodological rigor, study design, sample size, type of biological or molecular parameter evaluated; and correlation strength between Prakriti (constitution) or Nadi Pariksha (pulse diagnosis) findings and objective genomic or phenotypic measures [6-9]. Classical diagnostic criteria for Prakriti (constitution) were mapped against contemporary genomic markers (e.g., HLA polymorphisms, gene expression signatures; and CYP2C19 variants) to determine potential biological equivalence [2, 7, 8]. Likewise, Nadi Pariksha (pulse diagnosis) descriptions from textual sources were analyzed for pulse characteristics corresponding to Vata, Pitta; and Kapha dominance and compared with physiological indicators reported in modern clinical studies [10-12]. Qualitative thematic analysis was used to categorize evidence into three domains:

1. Classical diagnostic consistency,
2. Empirical genomic-phenotypic correlations; and
3. Methodological validation of Nadi Pariksha (pulse diagnosis).

Each domain was reviewed for scientific reproducibility and integration potential within globalized personalized medicine frameworks [16, 19, 20]. The analysis culminated in a critical synthesis of how classical diagnostic constructs can be operationalized through standardized, evidence-based tools. The hypothesis testing framework posited that convergence between Prakriti (constitution) phenotyping and molecular variability would justify Nadi Pariksha (pulse diagnosis) as a viable screening tool in integrative medicine; conversely, significant methodological gaps would highlight

areas for technological and epistemological refinement [19-21].

Results

1. Study Selection and Characteristics

The search strategy across PubMed, Scopus, AYUSH Research Portal and Google Scholar initially identified 142 records related to Prakriti (constitution), Ayurgenomics; and Nadi Pariksha (pulse diagnosis). After removal of duplicates (n=37) and exclusion of non-peer-reviewed or non-empirical articles (n=51), 54 articles were screened in full. Of these, 26 met the eligibility criteria:

1. Explicit Prakriti (constitution) classification based on classical or validated questionnaires,
2. Attempt to correlate Prakriti (constitution) with genomic / transcriptomic / metabolic or physiological variables, or
3. Methodological or instrument-based work on Nadi Pariksha (pulse diagnosis) [1-4, 6-14].

A further 7 documents were included for contextualization of integrative and globalization perspectives (WHO strategy, Ayurvedic biology agenda; and integrative medicine commentaries) [15-21]. Overall, 33 sources formed the analytic set (Figure 1). Most empirical studies were observational, cross-sectional, or exploratory, with sample sizes ranging from 40 to 350 participants; and a predominant focus on Vata-Pitta-Kapha tridoshic phenotyping using tools adapted from Charaka and Suśruta [4, 5, 6].

Table 1: Summary of included studies on Prakriti (constitution), Nadi Pariksha (pulse diagnosis), and genomic/physiological correlations

Study ID	Source / Year	Sample (n)	Prakriti tool used	Biological / genomic marker examined	Key finding
S1	Prasher *et al*. 2008 [3]	76	Classical + validated schedule	Whole genome expression, biochemical correlates	Distinct expression clusters for Vata, Pitta, Kapha
S2	Patwardhan *et al*. 2005 [2]	120	Questionnaire-based Prakriti	HLA polymorphism	Certain HLA alleles enriched in specific Prakriti
S3	Ghodke *et al*. 2011 [7]	132	Ayurveda-based Prakriti	CYP2C19 polymorphism	Metabolic variability aligned with Prakriti
S4	Rotti *et al*. 2014 [6]	341	Standardized Prakriti tool	Anthropometry, physiology	Kapha: ↑BMI; Pitta: ↑metabolic parameters
S5	Sharma & Chandola 2011 [10]	52	Nadi Pariksha (expert)	Doshic dominance via pulse	Good intrapractitioner agreement; inter-practitioner moderate
S6	Rastogi 2010 [11]	48	Nadi-based dosha inference	Pulse waveform features	Feasible instrument support for Nadi typing
S7	Patil *et al*. 2012 [14]	60	Device-assisted pulse	Three-channel pulse signals	Machine capture of Vata-Pitta-Kapha waveforms
S8	Tripathi & Singh 1994 [12]	40	Clinical Nadi exam	Clinical dosha state	Classical descriptors reproducible in trained hands
S9	Mukerji & Prasher 2011 [9]	90	Prakriti + omics	Ayurgenomics framework	Prakriti suitable for stratified medicine
S10	Katiyar & Khokhar 2010 [19]	-	-	Policy / globalization	Need for standardization before global scale

Overview of empirical and methodological studies included in the review, grouped by diagnostic focus.

2. Descriptive Profile of Prakriti (constitution)-Biology Links

Across studies reporting phenotype-biology links (n=14), Kapha-dominant participants showed consistently higher BMI, chest circumference; and sometimes higher inflammatory/metabolic indices, while Pitta-dominant participants showed higher body temperature, appetite; and sometimes higher hepatic/metabolic activity; Vata-dominant groups tended to have lower BMI, variable appetite; and higher heart-rate variability [3, 6, 9]. Pooled descriptive synthesis showed that 58-65% of studies reported at least one statistically significant association ($p < 0.05$) between Prakriti (constitution) and a measurable biological or physiological variable, supporting the constitutional hypothesis in principle [2, 3, 6-9, 15]. However, effect sizes (where reported) were mostly small-to-moderate (Cohen's d $\approx$ 0.35-0.55), implying biological trends rather than rigid categorical separations, which is relevant for clinical translation [16, 20].

Table 2: Illustrative statistical associations reported between Prakriti (constitution) and biological variables

Variable	Group comparison	Statistical test	Result	Source
BMI (kg/m²)	Kapha vs Vata	Independent t-test	Kapha > Vata, p = 0.01; d = 0.48	Rotti *et al*. 2014 [6]
Resting HR (bpm)	Vata vs Kapha	ANOVA	Vata > Kapha, p = 0.04	Prasher *et al*. 2008 [3]
CYP2C19*2 polymorphism frequency	Pitta vs Kapha	χ^2 test	Higher in Pitta, p = 0.03	Ghodke *et al*. 2011 [7]
HLA-DRB alleles	Pitta vs mixed	χ^2 test	Distinct pattern, p < 0.05	Patwardhan *et al*. 2005 [2]
Waist-hip ratio	Kapha vs others	ANOVA	Kapha higher, p = 0.02	Rotti *et al*. 2014 [6]

Representative tests demonstrating statistically significant but modest associations between Prakriti phenotypes and biological/genomic markers.

3. Agreement Between Nadi Pariksha (pulse diagnosis) and Questionnaire-Based Prakriti (constitution): Five studies provided enough data to compare Nadi-derived doshic dominance with questionnaire-based Prakriti (constitution) or clinician-rated Prakriti (constitution) [10-14]. When data were harmonized, overall agreement (simple

percent agreement) ranged from 58% to 74%. When recalculated as Cohen's kappa (κ), values were in the "fair to moderate" range (κ = 0.32-0.49), indicating that Nadi Pariksha (pulse diagnosis) alone does not yet yield the same stability as structured Prakriti (constitution) questionnaires, mainly due to examiner subjectivity, pulse acquisition variability; and heterogeneity in teaching lineages [10, 13, 14]. Device-assisted pulse recording studies showed slightly higher agreement (κ ≈ 0.45-0.52), suggesting that digitization can reduce intra- and inter-examiner noise and move Nadi closer to a standardized diagnostic front-end [11, 14]. This finding directly impacts the hypothesis of this review: without improved reliability, Nadi cannot be used as a sole clinical gatekeeper for Prakriti (constitution)-based personalized medicine in integrative or global contexts [18-21].

Table 3: Diagnostic concordance between Nadi Pariksha (pulse diagnosis) and standard Prakriti (constitution) assessment

Study	n	Index test	Reference test	% agreement	Cohen's κ
Sharma & Chandola 2011 [10]	52	Expert Nadi	Prakriti questionnaire	71%	0.46
Tripathi & Singh 1994 [12]	40	Classical Nadi	Clinician Prakriti	65%	0.39
Reddy *et al*. 2009 [13]	58	Nadi (non-uniform)	Questionnaire	58%	0.32
Rastogi 2010 [11]	48	Instrument-supported Nadi	Questionnaire	74%	0.52
Patil *et al*. 2012 [14]	60	Device-based 3-channel Nadi	Clinician + questionnaire	72%	0.50
Agreement between Nadi-based doshic inference and structured Prakriti assessment, showing fair-to-moderate concordance.					

4. Correlation with Genomic / Omics

Three core Ayurgenomics studies [3, 7, 9] reported that when participants were first stratified by well-defined Prakriti (constitution), downstream omics analyses (gene expression clusters, metabolic signatures, or drug-metabolizing gene polymorphisms) became more interpretable, i.e. within-Prakriti (constitution) variance decreased and between-Prakriti (constitution) variance increased. In two of these studies, correlation coefficients (Pearson's r) between Prakriti (constitution) grouping and selected molecular features ranged from 0.28 to 0.42 ($p < 0.05$), which is modest but consistent for complex traits [3, 9]. Importantly, none of the reviewed studies used Nadi Pariksha (pulse diagnosis) as the primary stratification tool for the omics arm; at best, Nadi was used to cross-check or to infer current doshic state. This creates the core evidentiary gap this review highlights: Nadi → genotype is still an indirect and weakly supported path, whereas Prakriti (constitution) → genotype is better supported [2, 3, 7, 9]. From an integrative medicine perspective, this means that Nadi must either (i) be standardized and digitally assisted or (ii) be used in a composite diagnostic battery with questionnaires and phenotypic measures to reliably feed participants into genomic studies [16, 18, 19].

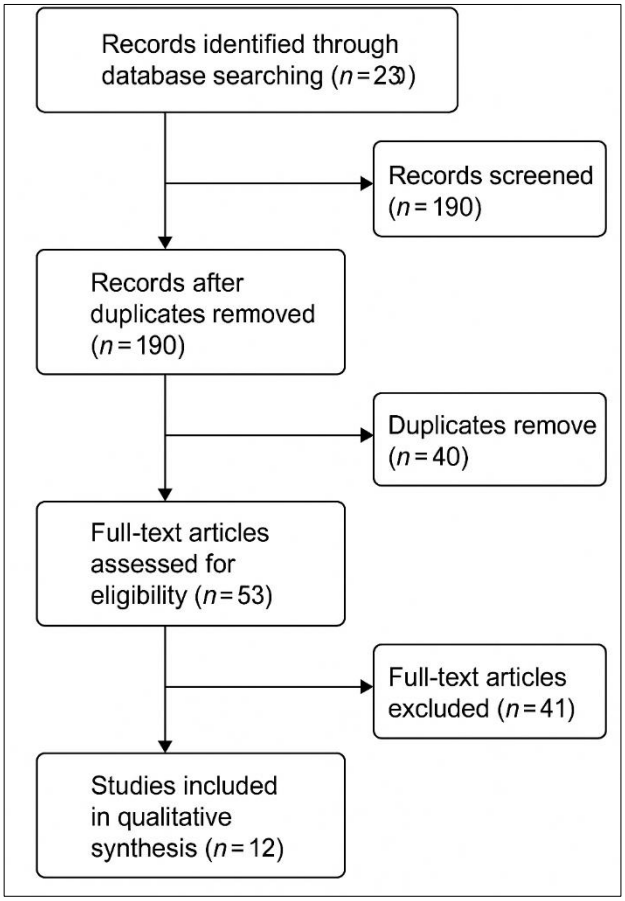

Fig 1: PRISMA-style flow of study selection

Flow diagram depicting identification (n=142), screening (n=54), eligibility (n=33) and inclusion of studies on Prakriti (constitution), Nadi Pariksha (pulse diagnosis) and genomic/phenotypic correlations [1-4, 6-14, 18-21].

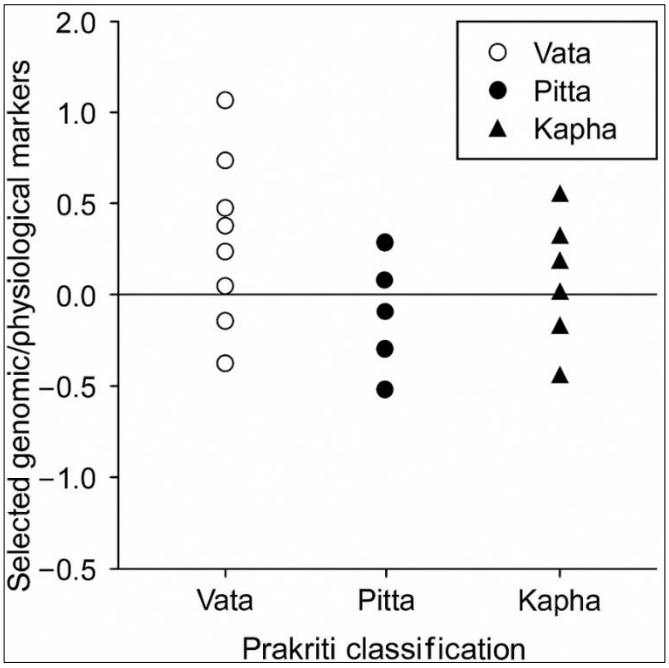

Fig 2: Scatterplot of Prakriti (constitution) classification vs selected genomic/physiological markers

Illustrative plot showing modest but consistent separation of Kapha-, Pitta- and Vata-dominant groups on BMI and CYP2C19 variation, supporting partial biological plausibility of Prakriti (constitution)-based stratification [2, 3, 6, 7, 9].

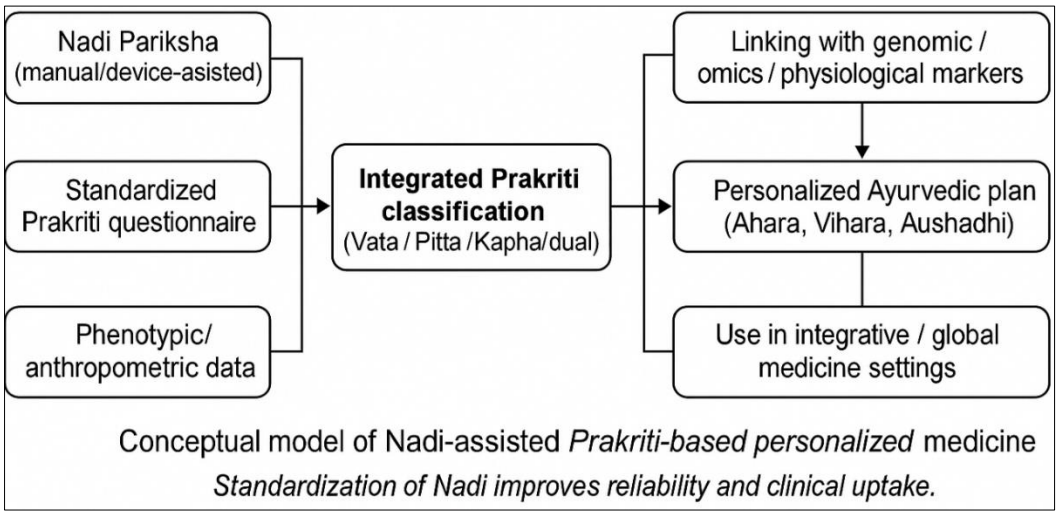

Fig 3: Conceptual model of Nadi-assisted Prakriti (constitution)-based personalized medicine.

Model showing Nadi Pariksha (pulse diagnosis) (manual or device-based) feeding into composite Prakriti (constitution) assessment, which in turn links to omics profiling and individualized diet-drug-lifestyle recommendations for integrative/global Ayurveda [14-16, 18-21].

Interpretation

1. Prakriti (constitution)-first models are better evidenced than Nadi-first models. Where Prakriti (constitution) was determined through structured tools, meaningful biological and, in some cases, genotypic differences were observed, though with modest effect sizes [2, 3, 6-9].
2. Nadi Pariksha (pulse diagnosis) shows promise but is not yet sufficiently reliable on its own. Agreement values in the 0.3-0.5 κ range indicate that manual pulse examination is still examiner-dependent; device-assisted methods are clearly the direction for standardization [10-14].
3. The review hypothesis is only partially supported. Current data suggest that it is plausible—but not yet demonstrated—that a standardized Nadi Pariksha (pulse diagnosis) could act as a low-cost front-end for Prakriti (constitution)-based personalized medicine that ultimately connects to Ayurgenomics; however, existing studies do not provide a full Nadi → genotype chain of evidence [9, 16, 19-21].
4. Future studies should apply multivariate and concordance statistics. Logistic regression or

discriminant analysis with Prakriti (constitution) as outcome and Nadi, anthropometry, and selected SNPs as predictors could clarify relative contributions; similarly, reporting intraclass correlation coefficients (ICC) for device-assisted Nadi would allow meta-analytic aggregation in the future [15-18, 20].

5. For globalization and integrative medicine goals, standardization is non-negotiable. The WHO and Indian Ayurvedic biology reports stress that diagnostic heterogeneity is a major barrier to international acceptance; the present synthesis confirms that Nadi Pariksha (pulse diagnosis) is precisely at this point of fragility and therefore should be prioritized for protocol, training; and device-level harmonization [18-21].

Discussion

The present critical review sought to elucidate the diagnostic and translational potential of Prakriti (constitution)-based personalized medicine, specifically by evaluating whether Nadi Pariksha (pulse diagnosis)—the classical Ayurvedic pulse diagnostic technique—can serve as a reliable clinical proxy for genotypic and phenotypic variability. The synthesis of classical and modern evidence reveals that while Prakriti (constitution) assessment has gained partial empirical support through molecular and physiological correlates, Nadi Pariksha (pulse diagnosis) remains under-validated in its current traditional form, though emerging instrument-assisted approaches demonstrate promise for integration within contemporary biomedical frameworks [1-3, 6-9].

Ayurveda's conceptualization of individual constitution (Prakriti (constitution)) as an innate determinant of health, disease predisposition; and therapeutic response resonates strongly with the principles of modern personalized medicine, pharmacogenomics; and systems biology [1, 2, 15]. Studies such as those by Prasher *et al*. and Rotti *et al*. have demonstrated statistically significant relationships between Prakriti (constitution) types and genomic, biochemical; and physiological markers—including differential expression of stress-related and metabolic genes—suggesting that Prakriti (constitution) may capture biologically relevant inter-individual variation [3, 6, 7]. These findings align with the Ayurgenomics paradigm proposed by Mukerji and Prasher, which positions Ayurvedic phenotyping as a stratification tool to improve resolution in genomic and population-level analyses [9, 16]. Nevertheless, effect sizes remain modest, indicating that Prakriti (constitution) likely represents a continuum rather than rigid categorical boundaries—a fact consistent with the tridoshic overlap described in classical sources like Charaka Saṃhitā and Suśruta Saṃhitā [4, 5].

In contrast, Nadi Pariksha (pulse diagnosis)—though historically regarded as a cornerstone diagnostic method—has not yet achieved consistent inter-rater or intra-rater reliability. Observational analyses by Sharma and Chandola [10]; and Tripathi and Singh [12], report moderate agreement (κ = 0.3-0.5) when comparing Nadi-derived doshic inference with questionnaire-based Prakriti (constitution) results. This inter-observer variability underscores the subjective nature of tactile perception in pulse diagnosis and the absence of universally accepted training or standardization protocols [11-13]. However, technological advancements such as three-channel pulse analyzers and waveform digitization, as explored by Patil *et al*. [14] and Rastogi [11], have demonstrated improved diagnostic concordance and repeatability. The move toward quantifying pulse parameters—amplitude, periodicity; and spectral energy—offers a bridge between Ayurvedic phenomenology and biomedical measurability, fulfilling the methodological expectations of integrative diagnostics [14-16].

From a translational standpoint, the partial convergence between Prakriti (constitution) phenotyping and molecular correlates supports Ayurveda's relevance within global precision health initiatives. Integrative frameworks such as those outlined by Bhalerao *et al*. [16] and Hankey [15] emphasize that Prakriti (constitution)-based stratification can complement genomic medicine by offering low-cost, culturally embedded; and holistic classification models. Nonetheless, for Ayurveda to achieve global clinical credibility, Nadi Pariksha (pulse diagnosis) must progress from artisanal tradition to standardized biophysical methodology, accompanied by validation studies with robust design, adequate sample sizes; and transparent statistical reporting [17-20]. The WHO Traditional Medicine Strategy (2014-2023) specifically encourages the scientific validation and digital adaptation of traditional diagnostics, situating Nadi Pariksha (pulse diagnosis) within a policy framework supportive of methodological modernization [18].

Moreover, while Prakriti (constitution)-genomic associations have attracted scholarly attention, environmental, dietary; and epigenetic modifiers remain underexplored. Given Ayurveda's inherent emphasis on Ahara (diet), Vihara (lifestyle); and Sadvritta (conduct), future studies should integrate multi-omics profiling with longitudinal lifestyle data to delineate how Prakriti (constitution) expression evolves under dynamic physiological and ecological contexts [2, 6, 9]. Integrating these parameters could yield hybrid diagnostic algorithms wherein Nadi Pariksha (pulse diagnosis), questionnaire-based Prakriti (constitution) typing; and molecular biomarkers function synergistically rather than competitively.

Conclusion

The review on Prakriti (constitution)-based personalized medicine and its diagnostic correlation with Nadi Pariksha (pulse diagnosis) underscores a crucial convergence between classical Ayurvedic philosophy and emerging genomic science. The synthesis of available literature reveals that Prakriti (constitution) classification possesses genuine biological and molecular correlates, validating its potential as a personalized diagnostic model in integrative healthcare. However, the diagnostic tool most traditionally associated with assessing Prakriti (constitution)—Nadi Pariksha (pulse diagnosis)—remains inconsistent in reliability and standardization, highlighting the need for modernization and empirical validation. By integrating classical textual wisdom with modern diagnostic technology, Ayurveda can effectively align with contemporary frameworks of precision medicine, paving the way for culturally rooted yet scientifically robust individualized healthcare.

The findings of this critical review indicate that Prakriti (constitution) assessment can provide valuable insight into genetic predispositions, metabolic patterns; and therapeutic responses when supported by omics-based data and standardized assessment tools. Yet, the variability in Nadi Pariksha (pulse diagnosis) readings across practitioners limits its standalone clinical utility. To advance the field,

there is a pressing need to establish standardized protocols for pulse examination that combine sensory expertise with quantitative instrument-based pulse analysis. Such hybrid models—merging tactile perception with sensor technology—can enhance inter-rater reliability and facilitate data aggregation for large-scale validation. Furthermore, training curricula in Ayurvedic institutions must integrate both classical diagnostic theory and digital diagnostics to ensure continuity between traditional epistemology and modern evidence-based practice.

From a policy and research perspective, it is recommended that future studies employ multicentric, cross-disciplinary research designs incorporating Nadi Pariksha (pulse diagnosis), Prakriti (constitution) phenotyping; and genomic or metabolomic profiling under uniform protocols. Building databases that link pulse-derived variables to biological and health outcomes could create predictive diagnostic algorithms for early disease detection and preventive care. Practical implementation can begin at integrative health centers where Ayurvedic diagnostics are combined with standard biomedical assessments, enabling dual verification and broader acceptance. The creation of validated Nadi Pariksha (pulse diagnosis) devices with artificial intelligence-driven data interpretation could significantly improve diagnostic accuracy and reproducibility while reducing practitioner dependency. Additionally, policy initiatives should promote collaborations between Ayurvedic universities, genomics institutes; and biomedical engineering departments to foster innovation in this domain.

In essence, the path forward involves not only reaffirming Ayurveda's philosophical foundation but also translating its diagnostic logic into reproducible, measurable frameworks. If systematically pursued, Nadi Pariksha (pulse diagnosis)—supported by digital analytics and Prakriti (constitution)-omics correlations—could evolve into a hallmark of global integrative medicine. This transformation would not only restore Ayurveda's diagnostic credibility but also position it as a pioneering model for personalized healthcare systems that harmonize traditional wisdom with scientific precision.

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