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Research Article

Development and Validation of a Hindi Prakriti Assessment Questionnaire Based on an English Validated Prakriti Scale: A Psychosomatic Constitution-Based Ayurvedic Tool

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I N F O

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A B S T R A C T

Background: Prakriti is a fundamental concept of Ayurveda that represents the psychosomatic constitution of an individual. It reflects the relative dominance of Vata, Pitta, and Kapha and is expressed through physical, physiological, psychological, and behavioural characteristics. The Prakriti assessment is clinically important for preventive health care, diagnosis, prognosis, selection of diet and lifestyle, drug selection, dose determination, and individualised treatment planning. However, Prakriti assessment is often subjective and may vary among physicians because many classical features are descriptive and assessor-dependent. An English Prakriti questionnaire was previously validated after item analysis and Cronbach's alpha reliability testing by Dr Parameswarappa S. Byadgi and Dr Neera Saini. The present study was undertaken to develop and validate a Hindi Prakriti Assessment Questionnaire based on the selected validated English questionnaire items.

Aim: To develop and validate a culturally appropriate Hindi Prakriti Assessment Questionnaire based on the already validated English Prakriti questionnaire for assessing the psychosomatic constitution of individuals from an Ayurvedic perspective.

Materials and Methods: This methodological validation study involved translation, linguistic adaptation, and validation of selected items from the validated English Prakriti questionnaire into Hindi. The process included item selection, translation, back-translation, linguistic evaluation, face validity, pilot testing, reliability testing, and statistical validation. The Hindi questionnaire consisted of 32 questions representing Vata, Pitta, and Kapha features across physical, physiological, psychological, and behavioral domains. Apparently healthy volunteers aged 18–60 years were included. Internal consistency was assessed using Cronbach's alpha. Validity and descriptive statistical parameters were calculated. Data were analyzed using SPSS.

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Results: A 32-item Hindi Prakriti Assessment Questionnaire was developed and validated. The questionnaire included items related to body size, body weight, height, bone structure, complexion, skin, hair, face, eyes, nose, teeth, lips, nails, appetite, taste preference, thirst, digestion, bowel habit, sleep, speech, physical activity, sweating, posture, emotions, anger, lifestyle orientation, response to problems, job preference, dream pattern, and memory. The internal consistency of the Hindi questionnaire was satisfactory, with Cronbach's alpha of 0.751. The validity value was 0.907. The mean score was 66.89, standard deviation was 9.59, median was 67.50, minimum score was 46, maximum score was 94, range was 32, variance was 91.99, and interquartile range was 14. The scoring system enabled determination of Eka-Doshaja, Dwandvaja/ Sansargaja, and Samadoshaja Prakriti based on the percentage dominance of Vata, Pitta, and Kapha.

Conclusion: The developed Hindi Prakriti Assessment Questionnaire is a reliable, valid, culturally appropriate, and clinically useful tool for assessment of Ayurvedic Prakriti among Hindi-speaking individuals. It improves objectivity, reproducibility, and uniformity in Prakriti assessment and may be useful in clinical practice, academic training, community screening, preventive health care, and research related to Ayurveda and personalized medicine.

Keywords: Ayurveda, Prakriti, Prakriti Assessment Questionnaire, Psychosomatic Constitution, Hindi Questionnaire, Vata, Pitta, Kapha, Questionnaire Validation, Cronbach's Alpha, Personalized Medicine

Introduction

Ayurveda, the science of life, describes comprehensive principles for preservation of health, prevention of disease, and individualized management of illness. One of the most important concepts of Ayurveda is Prakriti, which denotes the natural psychosomatic constitution of an individual. Prakriti is determined by the relative predominance of Vata, Pitta, and Kapha and is expressed through physical, physiological, psychological, and behavioral characteristics.

Prakriti Pariksha is an important component of Ayurvedic clinical examination and has been described as the first component of Dashavidha Pariksha, the tenfold examination used for assessing the overall strength and individuality of the patient. In clinical practice, Prakriti assessment helps in understanding physical strength, mental strength, digestive capacity, disease susceptibility, adaptability, drug response, dietary suitability, prognosis, and individualized treatment planning.[1]

The importance of Prakriti extends beyond disease management. It provides a framework for preventive, promotive, predictive, and personalized health care. Ayurveda emphasizes individualized diet, lifestyle, seasonal regimen, medicine, dose, and therapeutic procedure according to Prakriti. This approach closely resembles the contemporary concept of P4 medicine, which includes predictive, preventive, personalized, and participatory medicine.[2,3]

Despite its clinical relevance, Prakriti assessment remains challenging. The characteristic features described in classical Ayurvedic texts are often qualitative, subjective, and dependent on physician interpretation. Different physicians may assess the same individual differently because of variation in understanding, clinical experience, and method of observation. Therefore, a standardized, valid, reliable, reproducible, and user-friendly Prakriti assessment tool is necessary for clinical practice and research.

An English Prakriti questionnaire was previously prepared and validated after item analysis and Cronbach's alpha reliability testing by Dr. Parameswarappa S. Byadgi and Dr. Neera Saini. The present study focused on developing a culturally suitable Hindi version based on the validated English questionnaire and evaluating its reliability and validity among Hindi-speaking individuals.

Rationale of the Study

Prakriti assessment is widely used in Ayurveda, but uniformity in assessment remains a major concern. Existing formats and software-based tools often do not include all relevant classical features or may not be linguistically suitable for Hindi-speaking populations. Since Hindi is widely used in clinical, community, and academic settings in India, a Hindi Prakriti questionnaire is necessary for wider applicability.

A validated Hindi Prakriti Assessment Questionnaire is important for the following reasons:

- To reduce assessor-dependent variability in Prakriti assessment.
- To provide a standardized and reproducible assessment method.
- To improve clinical documentation and research comparability.
- To make Prakriti assessment accessible to Hindi-speaking individuals.
- To assist clinicians in diet, lifestyle, medicine, dose, and prognosis-related decisions.
- To support research in Ayurveda, personalized medicine, genomics, psychology, immunology, and preventive health care.
- To provide a practical tool for academic teaching and community-based studies.

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Aim and Objectives

Aim

To develop and validate a Hindi Prakriti Assessment Questionnaire based on the already validated English Prakriti questionnaire, prepared after item analysis and Cronbach's alpha reliability testing by Dr. Parameswarappa S. Byadgi and Dr. Neera Saini, for assessing the psychosomatic constitution of an individual from an Ayurvedic perspective.

Objectives

- To develop a culturally appropriate Hindi version of the validated English Prakriti Assessment Questionnaire for assessment of Ayurvedic Prakriti.
- To translate and linguistically adapt the selected validated English questionnaire items into Hindi while maintaining conceptual, semantic, and clinical equivalence.
- To validate the Hindi Prakriti Assessment Questionnaire using standard questionnaire development and validation methodology.
- To assess the reliability of the Hindi Prakriti Assessment Questionnaire through internal consistency testing using Cronbach's alpha.
- To evaluate the reproducibility and objectivity of the Hindi questionnaire for uniform assessment of Vata, Pitta, and Kapha Prakriti.
- To develop a rational, reliable, reproducible, and user-friendly Hindi tool for Prakriti assessment suitable for clinical practice, academic use, and research settings.

Materials and Methods

Study Design

The present study was a methodological questionnaire development and validation study. It involved translation, linguistic adaptation, pilot testing, validation, reliability testing, and statistical evaluation of a Hindi Prakriti Assessment Questionnaire based on an already validated English Prakriti questionnaire.

Source Questionnaire

The source tool was an English validated Prakriti questionnaire prepared after item analysis and Cronbach's alpha reliability testing by Dr. Parameswarappa S. Byadgi and Dr. Neera Saini. The selected items were based on classical Ayurvedic descriptions of Prakriti and were grouped into physical, physiological, psychological, and behavioural characteristics.[21]

Development of Hindi Prakriti Assessment Questionnaire

The development of the Hindi questionnaire followed accepted principles of questionnaire development and validation.[4–6] The selected validated English items were translated into Hindi using simple, understandable, non-leading, and culturally appropriate language. Care was taken to preserve the Ayurvedic meaning of Vata, Pitta, and Kapha features while ensuring respondent comprehension.

The Hindi questionnaire included 32 practical questions covering the following domains:

- Physical characteristics
- Physiological characteristics
- Psychological characteristics
- Behavioural characteristics

Each question contained three response options corresponding to Vata, Pitta, and Kapha features.

Translation and Linguistic Adaptation

The validated English questionnaire was translated into Hindi by investigators proficient in both languages. The Hindi version was reviewed for conceptual clarity, semantic equivalence, cultural appropriateness, and clinical relevance. Back-translation was performed by independent translators who were blind to the original English version. The original, translated, and back-translated versions were compared to identify and correct discrepancies.

This process ensured semantic, idiomatic, experiential, and conceptual equivalence between the English and Hindi versions.

Face Validity

Face validity was assessed to determine readability, clarity of language, ease of understanding, feasibility of administration, and acceptability of the questionnaire. Investigators and respondents reviewed the Hindi items and confirmed that the questions were understandable, relevant, and suitable for Prakriti assessment.

Pilot Testing

A preliminary pilot test was conducted to evaluate the administration process, time required for completion, clarity of questions, and respondent understanding. Based on pilot feedback, the questionnaire was refined for better clarity, feasibility, and practical use.

Study Participants

Apparently healthy volunteers aged 18–60 years of either sex were included in the study.

Inclusion Criteria

- Apparently healthy individuals.
- Age between 18 and 60 years.
- Either sex.
- Willingness to participate.
- Ability to provide informed consent.

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Exclusion Criteria

- Individuals below 18 years or above 60 years.
- Individuals with known illness at the time of assessment.
- Mentally challenged individuals.
- Individuals unwilling to provide consent.
- Individuals unable to understand the questionnaire.

Sample Size

The sample size for the present validation study was based on the feasibility of administering the Hindi Prakriti Assessment Questionnaire during the pilot validation phase and the availability of apparently healthy volunteers fulfilling the inclusion criteria. A total of 60 apparently healthy participants were included for reliability and validity testing of the Hindi questionnaire.

For final journal submission, the exact statistical sample-size calculation may be added as follows:

Sample-size calculation statement to be completed before submission: "As this was a preliminary methodological validation study, a formal sample-size calculation was not performed. A feasibility-based sample of 60 apparently healthy participants was included for pilot validation and internal consistency testing. Further multicentric studies with larger sample sizes are recommended."

Ethical Considerations

The study was conducted after obtaining approval from the Institutional Ethics Committee.

IEC approval details to be added before final submission: Institutional Ethics Committee: IMS Institutional ethical committee IEC Approval Number: no.Dean/2022//EC/4079 Date of Approval: 15-04-2023 Place of Approval: IMS , BHU

The purpose and procedure of the study were explained to participants in the local language. Written informed consent was obtained from each participant. Confidentiality of data was maintained throughout the study.

Standard Operating Procedure Before Prakriti Assessment

To reduce observational bias during assessment of physical features, participants were instructed as follows:

- Not to apply kajal, surma, mascara, or other eye cosmetics on the day of examination.
- To come without applying cream, oil, conditioner, or hair gel.
- To avoid paan or any substance that may colour the teeth.
- To brush teeth before the examination.
- Not to apply nail polish, nail paint, henna, or similar substances on or before the day of examination.
- To avoid tight clothing and wear loose, comfortable dress.
- Not to use deodorant, perfume, or similar substances on the day of examination.

Scoring Method

For each response, one mark was allotted to the corresponding Doṣa. The raw scores of Vata, Pitta, and Kapha were calculated separately. Since all three Doṣa have equal theoretical importance in Prakriti determination, weighted percentage scores were used for final interpretation.

Determination of Prakriti Type

Statistical Analysis

Data were entered into Microsoft Excel and analysed using SPSS. Descriptive statistics including mean, standard deviation, median, minimum, maximum, range, variance, and interquartile range were calculated. Internal consistency was assessed using Cronbach's alpha. A Cronbach's alpha value greater than 0.7 was considered acceptable for reliability. Validity was assessed using the calculated validity value.

Hindi Prakriti Assessment Questionnaire

Instruction: Please read each question carefully and select the option that best describes your usual natural tendency.

Table 1.Each question had three options representing Vata, Pitta, and Kapha features

Response Option	Prakriti Indication
Option A	Vata feature
Option B	Pitta feature
Option C	Kapha feature

Table 2.The percentage dominance of Vata, Pitta, and Kapha was used to determine the type of Prakriti

Type of Prakriti	Criteria
Eka-Doshaja Prakriti	If the percentage of the first dominant Doṣa is >50% and the difference between first and second dominant Doṣa is >25%, or if the second and third dominant Doṣa values fall in the range of 18%–27%
Samadoshaja Prakriti	If the values of all three Doṣa fall in the range of 30%–34%

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Sansargaja / Dwandvaja Prakriti	If the above criteria are not fulfilled, the Prakriti is considered Dwandvaja; the dominant Doṣa is written first
Equal percentage of two Doṣa	If two Doṣa percentages are equal, the raw score is considered for deciding which Doṣa should be written first

Table 3.A = Vata feature, B = Pitta feature, C = Kapha feature

S. No.	प्रश्न	विकल्प A	विकल्प B	विकल्प C
1	आपके शरीर का आकार कैसा है?	दुबला और पतला है	मध्यम है	बड़ा आकार है
2	आपके शरीर का वजन कैसा है?	शरीर का वजन बढ़ाना बहुत मुश्किल होता है	आसानी से वजन बढ़ा और घटा सकते हैं	वजन कम करना बहुत मुश्किल होता है
3	आपकी लम्बाई कैसी है?	लंबा है	औसत या मध्यम है	लम्बाई छोटी है, देखने में प्रिय और मनोहर है
4	आपकी हड्डी की संरचना का प्रकार कैसा है?	हड्डियां हल्की, छोटी हैं और हड्डियों का जोड़ कमजोर है	हड्डियों का आकार और जोड़ मध्यम है	छोटी हड्डियां हैं और हड्डियों का जोड़ मजबूत है
5	आपके शरीर की त्वचा का रंग कैसा है?	त्वचा का रंग सांवला है	त्वचा पीली-गोरी है और धूप में आसानी से लाल हो जाती है	त्वचा सफेद और अच्छी दिखने वाली है
6	आपकी त्वचा का सामान्य अनुभव या स्पर्श कैसा है?	त्वचा रुखी और ठंडी रहती है	त्वचा गर्म और चिकनी रहती है	त्वचा ठंडी और तैलीय रहती है
7	आपकी त्वचा की बनावट या गुणवत्ता कैसी है?	पूरे शरीर में रंजकता या झाइयां हैं और प्रमुख नसें दिखाई देती हैं	शरीर पर अत्यधिक तिल और झाइयां हैं	त्वचा मुलायम और चमकदार है
8	आपके बालों का रंग क्या है?	बालों का रंग काला है	बालों का रंग हल्का भूरा है और समय से पहले बाल सफेद हो गए हैं	बालों का रंग चमकीला काला है

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9	आपके बालों की दिखावट और प्रकृति कैसी है?	बाल सूखे, घुंघराले, उलझे और आसानी से टूट जाते हैं	बाल तैलीय, सीधे, कमजोर या अधिक गिरने वाले हैं	बाल मोटे और मजबूत हैं
10	आपके चेहरे का आकार कैसा है?	चेहरे का आकार लंबा, सकरा और पतला है	चेहरे का आकार नुकीली ठुड्डी के साथ दिल के आकार का है	चेहरे का आकार बड़ा, गोल और भरा हुआ है
11	आपकी आंखें कैसी हैं?	आंखें छोटी, काली और नींद के दौरान थोड़ी खुली रहती हैं	आंखें पीली हैं और आराम की इच्छुक रहती हैं	आंखें बड़ी, सुंदर, शांत और प्यारी हैं
12	आपकी नाक का आकार कैसा है?	मेरी नाक नुकीली और छोटी है	मेरी नाक नुकीली और अर्धगोल है	मेरी नाक गोल है और बड़े खुले नथुने हैं
13	आपके दांत और मसूड़े कैसे दिखते हैं?	मेरे दांत अनियमित और उभरे हुए हैं	मेरे मसूड़ों का रंग लाल है और दांत मध्यम आकार के हैं	मेरे दांत सफेद, बड़े और मजबूत हैं
14	आपके होठ कैसे दिखते हैं?	मेरे होठ सूखे और पतले हैं	मेरे होठ चिकने और हल्के भूरे हैं	मेरे होठ नरम, गुलाबी और आकर्षक हैं
15	आपके नाखून कैसे हैं?	मेरे नाखून सूखे, खुरदरे, भंगुर हैं और आसानी से टूट जाते हैं	मेरे नाखून नुकीले, पीले और चमकदार हैं	मेरे नाखून मोटे और चिकने हैं
16	आपको भूख कैसी लगती है?	मुझे अनियमित और अल्प भूख लगती है	मुझे अधिक और असहनीय भूख लगती है	मुझे कम लेकिन नियमित समय पर भूख लगती है
17	आपको खाने में किस तरह का स्वाद पसंद है?	मुझे मीठा, खट्टा, नमकीन, गर्म भोजन और पेय पसंद हैं	मुझे मीठा, कड़वा, कसैला और ठंडा पसंद है	मुझे तीखा, कड़वा, कसैला और गर्म पसंद है
18	आपको प्यास कैसी लगती है?	मुझे प्यास की इच्छा कभी-कभी ज्यादा होती है	मुझे प्यास की इच्छा हमेशा ज्यादा होती है	मुझे प्यास की इच्छा अल्प होती है

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19	आपकी पाचनक्रिया कैसी रहती है?	मेरी पाचनक्रिया अनियमित रहती है, आमतौर पर गैस बनती है और अधिक डकार आती है	मेरी पाचनक्रिया तेज रहती है और कभी-कभी तेज जलन होती है	मेरी पाचनक्रिया लंबे समय तक रहती है और सामान्य होती है
20	आपके मलत्याग की सामान्य प्रवृत्ति कैसी है?	मुझे कब्ज बनता है और सख्त मल होता है	मुझे ढीला और अधिक मल होता है	तैलीय/नरम लेकिन सामान्य मल होता है
21	आपको नींद कैसी लगती है?	मुझे बहुत कम नींद आती है और अनिद्रा से परेशान रहता/रहती हूं	मुझे अच्छी और नियमित नींद आती है	मुझे गहरी, शांत और लंबी अवधि तक नींद आती है
22	आपकी बोलने की गुणवत्ता कैसी है?	मैं तेज, अस्पष्ट और अत्यधिक बोलता/बोलती हूं	मैं स्पष्ट, तीक्ष्ण, तीव्र और सही अर्थ के साथ बोलता/बोलती हूं	मैं धीमा, कोमल और मधुर बोलता/बोलती हूं
23	आपकी शारीरिक गतिविधि कैसी है?	मैं शारीरिक रूप से अत्यधिक गतिशील और अति सक्रिय रहता/रहती हूं	मैं शारीरिक रूप से मध्यम और सामान्यतः सक्रिय रहता/रहती हूं	मैं शारीरिक रूप से धीमा/धीमी हूं और काम सोच-समझकर करता/करती हूं
24	आपको पसीना कैसा होता है?	मुझे पसीना सामान्य होता है	मुझे अत्यधिक पसीना आता है और शरीर से दुर्गंध भी आती है	मुझे कम पसीना होता है
25	आपकी शारीरिक मुद्रा और चाल कैसी है?	मेरी मुद्रा और चाल बार-बार बदलती रहती है तथा चलने पर जोड़ों में ध्वनि उत्पन्न होती है	मेरी शारीरिक मुद्रा और चाल कुछ समय तक स्थिर बनी रहती है	मेरी शारीरिक मुद्रा और चाल लंबे समय तक स्थिर रह सकती है

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26	आपकी भावनाएँ कैसी हैं?	मुझमें हमेशा चिंता, भय और अनिश्चितता की भावनाएँ बनी रहती हैं	मुझमें क्रोध, महत्वाकांक्षा और व्यावहारिकता की भावनाएँ बनी रहती हैं	मुझमें शांतिपूर्ण और चिंतनशील भावनाएँ बनी रहती हैं
27	क्या आपको क्रोध आता है?	मुझे क्रोध बहुत जल्दी आता है और मैं अस्थिर हो जाता/जाती हूं	मुझे क्रोध शीघ्र आता है लेकिन जल्दी शांत हो जाता/जाती हूं	मुझे क्रोध बहुत कम आता है और मैं सामान्यतः शांत रहता/रहती हूं
28	आपकी जीवन शैली अभिविन्यास कैसी है?	मैं किसी से जल्दी जुड़ जाता/जाती हूं और जल्दी अलग भी हो जाता/जाती हूं	मैं व्यावहारिक जीवन बिताता/बिताती हूं	मैं पारिवारिक जीवन बिताता/बिताती हूं
29	आप किसी समस्या का जवाब कैसे देते हैं?	समस्या आने पर मैं चिंतित और भ्रमित हो जाता/जाती हूं और अक्सर गलत हल निकालता/निकालती हूं	समस्या आने पर मैं उत्तेजित हो जाता/जाती हूं लेकिन सही और दृढ़ समाधान निकालता/निकालती हूं	समस्या आने पर मैं शांत, धीमे और धैर्यपूर्वक सही समाधान निकालता/निकालती हूं
30	आपकी व्यवसायिक/नौकरी की वरीयता क्या है?	मैं रचनात्मक, यात्रा और गतिशील कार्य करना पसंद करता/करती हूं	मैं चुनौतीपूर्ण और आक्रामक कार्य करना पसंद करता/करती हूं	मैं नियमित कार्य धैर्यपूर्वक और सोच-समझकर करना पसंद करता/करती हूं
31	आपको किस तरह के सपने आते हैं?	मैं सपने में आकाश, पर्वत आदि पर घूमता/घूमती हूं	मैं सपने में अग्नि, बिजली और उल्का आदि ज्वलनशील पदार्थों को देखता/देखती हूं	मैं सपने में हंस, कमल, चकवा, नदी, जलाशय आदि देखता/देखती हूं

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32	आपकी स्मृति कैसी है?	मैं किसी बात को जल्दी समझता/समझती हूं लेकिन जल्दी भूल भी जाता/जाती हूं	मैं किसी बात को आसानी से समझता/समझती हूं लेकिन कभी-कभी भूल जाता/जाती हूं	मैं किसी बात को धीरे समझता/समझती हूं लेकिन पुनः याद करने की शक्ति अच्छी है

Results

Development of the Hindi Questionnaire

A Hindi Prakriti Assessment Questionnaire was developed based on the selected items of the validated English Prakriti questionnaire. The final Hindi version consisted of 32 questions distributed across physical, physiological, psychological, and behavioural domains.

Domains Included in the Final Questionnaire

Physical Domain

The physical domain included questions related to body size, body weight, height, bone structure, complexion, skin touch, skin texture, hair colour, hair quality, face shape, eyes, nose, teeth and gums, lips, and nails.

Physiological Domain

The physiological domain included appetite, taste preference, thirst, digestion, bowel habit, sleep, speech quality, physical activity, sweating, and posture/gait.

Psychological and Behavioural Domain

The psychological and behavioural domain included emotions, anger, lifestyle orientation, response to problems, job preference, dream pattern, and memory.

Reliability Analysis

The internal consistency of the 32-item Hindi Prakriti Assessment Questionnaire was tested on 60 participants. Cronbach's alpha was found to be **0.751**, indicating satisfactory reliability.

Validity and Descriptive Statistics

Table 4.The validity value was found to be 0.907, indicating strong validity of the Hindi questionnaire

Parameter	Value
Reliability, Cronbach's alpha	0.751
Validity	0.907
Mean	66.89
Standard deviation	9.59
Median	67.50
Minimum	46
Maximum	94
Range	32
Variance	91.99
Interquartile range	14

Interpretation of Reliability

The Cronbach's alpha value of 0.751 indicates acceptable internal consistency of the Hindi questionnaire. This shows that the items included in the questionnaire are sufficiently related and measure the intended construct of Prakriti in a reliable manner.

Interpretation of Validity

The validity value of 0.907 indicates that the Hindi Prakriti Assessment Questionnaire is capable of measuring the intended construct with good accuracy. The questionnaire was found to be clear, feasible, culturally appropriate, and suitable for uniform assessment of Prakriti among Hindi-speaking individuals.

Discussion

Prakriti is an essential concept of Ayurveda and is central to individualized clinical decision-making. It reflects the constitutional dominance of Vata, Pitta, and Kapha and manifests through physical, physiological, psychological, and behavioural characteristics. Assessment of Prakriti helps clinicians understand the patient's strength, disease susceptibility, appetite, bowel pattern, sleep, mental tendencies, adaptability, treatment response, and prognosis.

In the present study, a Hindi Prakriti Assessment Questionnaire was developed from an already validated English Prakriti questionnaire. The need for this Hindi version was based on the practical requirement of a culturally appropriate and easily understandable tool for Hindi-speaking populations. Since a large number of Ayurveda patients and community participants are Hindi-speaking, a validated Hindi questionnaire can improve the accuracy and reach of Prakriti assessment.

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The translation and linguistic adaptation process ensured that the meaning of the original English items was preserved while making the questionnaire understandable to Hindi-speaking participants. This is particularly important because Prakriti features are rooted in classical Ayurvedic concepts and cannot be translated literally without considering cultural and clinical context.

The final questionnaire contained 32 questions covering physical, physiological, psychological, and behavioural domains. This multidimensional structure is appropriate because Prakriti is not limited to bodily features alone. It represents the whole psychosomatic profile of an individual. The inclusion of features such as appetite, digestion, sleep, emotions, anger, memory, response to problems, and lifestyle orientation makes the tool more comprehensive.

The internal consistency of the questionnaire was satisfactory, with Cronbach's alpha of 0.751. This indicates that the items have acceptable coherence and measure related aspects of Prakriti. The validity value of 0.907 further supports the usefulness of the questionnaire. These findings suggest that the Hindi Prakriti Assessment Questionnaire can be used as a reliable and valid tool in clinical and research settings.

The scoring method using Vata, Pitta, and Kapha response options allows practical determination of Prakriti. The classification into Eka-Doshaja, Dwandvaja/Sansargaja, and Samadoshaja Prakriti provides clinically meaningful interpretation. This makes the tool useful for routine Ayurveda outpatient assessment, academic training, research studies, and community-based health screening.

The questionnaire may also support interdisciplinary research. Recent studies have explored associations between Prakriti and genomics, gene expression, biochemical markers, immune profiles, and personalized medicine.[12–15] A standardized Hindi questionnaire can improve participant classification and enhance reproducibility in such studies.

Overall, the present Hindi Prakriti Assessment Questionnaire provides a bridge between classical Ayurvedic constitutional assessment and modern questionnaire-based research methodology. It can support the wider application of Prakriti assessment in personalized and preventive health care.

Clinical Implications

The Hindi Prakriti Assessment Questionnaire may be useful in:

- Routine Ayurvedic clinical examination.
- Assessment of psychosomatic constitution.
- Evaluation of Rogi Bala.
- Selection of diet and lifestyle recommendations.
- Preventive and promotive health care.
- Drug selection and dose planning.
- Panchakarma planning.
- Prognostic evaluation.
- Academic training of Prakriti Pariksha.
- Community-based Ayurveda research.
- Personalized medicine and integrative health studies.

Strengths of the Study

- The Hindi questionnaire was developed from an already validated English Prakriti questionnaire.
- The items were based on classical Ayurvedic concepts.
- Translation and linguistic adaptation were performed carefully.
- The questionnaire covered physical, physiological, psychological, and behavioural domains.
- The tool was developed in Hindi for wider clinical and community applicability.
- Reliability was assessed using Cronbach's alpha.
- The validity value supported the accuracy of the questionnaire.
- The scoring system allowed practical determination of Vata, Pitta, and Kapha dominance.

Limitations

The study included apparently healthy individuals aged 18–60 years. Therefore, further validation is required in children, elderly individuals, diseased populations, and special clinical groups. The sample size was limited, and larger multicentric studies are needed to confirm generalizability. Some Prakriti features remain subjective and may depend on self-awareness and interpretation of the respondent. Further studies may assess inter-rater reliability, intra-rater reliability, test–retest reliability, and factor structure in larger populations.

Future Scope

Future research should validate the Hindi Prakriti Assessment Questionnaire in larger and diverse populations. The tool may be tested across different geographical regions, educational backgrounds, disease groups, and clinical settings. It may also be translated into other Indian languages using standard cross-cultural adaptation methods.

Digital versions of the questionnaire may be developed for automated scoring, electronic health records, mobile health applications, and community screening. Further studies may explore correlation of Prakriti with genomic markers, biochemical profiles, gut physiology, immune response, psychological traits, pharmacological response, disease susceptibility, and preventive health outcomes.

Conclusion

The present study developed and validated a Hindi Prakriti Assessment Questionnaire based on an already validated English Prakriti questionnaire prepared after item analysis and Cronbach's alpha reliability testing by Dr.

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Parameswarappa S. Byadgi and Dr. Neera Saini. The final Hindi questionnaire consisted of 32 items covering physical, physiological, psychological, and behavioural domains.

The questionnaire demonstrated satisfactory internal consistency with Cronbach's alpha of 0.751 and strong validity with a value of 0.907. It is a simple, culturally appropriate, reliable, valid, and clinically useful tool for Prakriti assessment among Hindi-speaking individuals. The tool may improve objectivity, reproducibility, and uniformity in Prakriti assessment and may support clinical practice, academic training, community health assessment, and personalized Ayurveda research.

Declarations

Ethics Approval

The study protocol and consent form were approved by the Institutional Ethics Committee before initiation of the study.

IEC details to be added before submission: Institutional Ethics Committee: IMS Institutional ethical committee IEC Approval Number: no.Dean/2022//EC/4079 Date of Approval: 19-05-2020 Place of Approval: IMS , BHU

Informed Consent

Written informed consent was obtained from all participants before administration of the questionnaire.

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Conflict of Interest: None

Author Contributions

Pratibha Singh: Questionnaire development, translation, data collection, analysis, and manuscript preparation. Prof. Parameswarappa S. Byadgi: Conceptual guidance, methodology, supervision, validation support, and critical revision. Prof. Mona Srivastava: Expert inputs, psychological domain guidance, review, and critical revision.

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