Development and initial standardization of Ayurveda child personality inventory

S. P. Suchitra, Arati Jagan, H. R. Nagendra

Department of Life Sciences, SVAYSA, Yoga University, Bangalore, Karnataka, India

ABSTRACT

Background: Ayurveda inventories for *prakriti* (constitution) have been developed and validated for adults. Children, however, require different categories of quarter and questions, for example, to assess the intelligence, the questions can be related to their scholastic performances. **Objective:** To develop and standardize an inventory to assess the *prakriti* of the children, and to compare with Child Personality Questionnaire (CPQ). **Materials and Methods:** A 135-item Ayurveda child personality inventory (ACPI) scale was developed on the basis of translation of Sanskrit verses describing *vataja* (A), *pittaja* (B), and *kaphaja prakriti* (C) characteristics and by taking the opinions of experts (ten Ayurveda experts and three psychologists). Study was carried out in Maxwell public school, Bangalore. The scale was administered on parents of children of the age group 6-12 years. CPQ was administered on children of the age group 8-12 years. **Results:** The ACPI was associated with excellent internal consistency. The Cronbach's alpha for A, B, and C scales were 0.77, 0.55, and 0.84, respectively, and the Split-half reliability scores were 0.66.0.39 and 0.84, respectively. Factor validity coefficient scores on each items was above 0.5. Scores on *vataja, pittaja* and *kaphaja* scales were inversely correlated. Items of V, P, and K scales showed significant correlation (values ranging from 0.39 to 0.84) with subscales of CPQ, which indicates that Eastern and Western psychology concept have good correspondence. **Conclusions:** The prakrti of the children can be measured consistently by this instrument. Scores on V and *P* scale showed good correlation with the anxiety primary scale of CPQ.

Key words: *Prakriti, vata, pitta, kapha, tridosha*

INTRODUCTION

Ayurveda, the ancient life science, is an aspect of Vedic lore most closely connected to Rigveda and Atharvaveda. It is centered on the principles of *Panchamahabhuta* (space, air, fire, water, and earth) and *tridosha-vata, pitta,* and *kapha. Tridosha* are the metabolic principles (maintains all the functions in the body as breathing, memory, digestion, intelligence, and nourishment).[1-9]

Address for correspondence:
HR Nagendra Swami Vivekananda Yoga Anusandhana Samsthana (S-VYASA), Eknath Bhavan, No.19, Gavipuram Circle, Kempegowda Nagar, Bangalore - 560 019, Karnataka, India
E-mail: svyasablr@yahoo.com

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Western psychologists, Carl Jung and HJ Eysenik classify the personality of an individual based on temperament, behavior and characteristics such as 'introvert', 'extrovert' as a dimension of personality, which HJ Eysenik extended this to include dimensions of neuroticism and psychoticism.[10]

In contrast, Ayurveda classics[1-9] propose a comprehensive outlook of personality, encompassing physical–physiological aspects like color of the eyeball, texture of hair, appetite, sleep, behavior, attitudes and interests, memory, intelligence, mental stamina of an individual based around *tridosha,* recognizing that tridoshas physiological characteristics also influence mental and behavioral qualities. Further, the texts suggests seven types of personality (*vata, pitta, kapha, vata-pitta, vata-kapha, pitta-kapha,* and *sama*) determined by predominance of a single, pair, or all of the *dosha.*

Ayurveda considers the balanced state (sama) of *tridosha* as health. Person with predominance of single and double doshas will always be afflicted by one or more diseases.[1] Accordingly, Ayurveda recommends specific diet and daily regime for different types of personalities for the prevention of health.

Statistical model of dosha *prakriti* based on analysis of a questionnaire has been developed.[11] An analysis of *tridosha*

physiology, linking it to process of cellular physiology has been carried out.[12,13] Similarly a genetic basis of *tridosha* constitution has been postulated.[14-16] Importance of *dosha* in health and treatment methods have been discussed.[17] A study comparing the Ayurveda personality concepts and Western psychology concepts is available.[18] However, a simple and standardized instrument to assess the *prakriti* of children according to Ayurvedic comprehensive concepts is not available. Hence, the present investigation was carried out to develop Ayurveda child Personality inventory (ACPI).

MATERIALS AND METHODS

Ethical clearance was approved by research board of SVYASA (Yoga university). The ACPI was developed based on 522 Sanskrit characteristics from 9 authoritative ancient texts describing characteristics typical of *vataja, pittaja*, and *kaphaja prakriti*. Item reduction was carried out by deleting the repeated items, ambiguous items, and by selecting those items specifically suitable for children. A total of 155 items in Sanskrit, and translation in English, were presented to 10 Ayurveda experts. They were asked to judge the correctness of each statement and to check: (1) whether any of the items were repeated or if any item should be added? (2) whether the features of *vataja, pittaja* and *kaphaja prakriti* selected for the scale are correct, and (3) if the constructed items were in acceptable translation of the Sanskrit in the original texts. As per their suggestions, 147 items were retained and some of the items were changed and refined.

Based on the final Sanskrit statements, 165 questions of ACPI were framed by the researcher. The scale was again presented to ten Ayurveda experts and three psychologists, who reviewed the format of this scale and recommended a dichotomous scoring (0 and 1), which was adopted in the final ACPI. Suggestions in the phrasing of questions were incorporated. A total of 158 questions that were agreed by all Ayurveda experts and psychologists were retained. Initially, scale was answered by parents of 60 children. Item difficulty level was analyzed.

The final ACPI has 135 items - out of this, 45 items for *vataja prakriti* (A-scale) 44 items for *pittaja prakriti* (B-scale) and 46 items for *kaphaja prakriti* (C-scale) subscales. The scale was to be answered by the parents of the children [Supplementary 1].

Data collection and analysis
For testing the reliability and validity, the scale was administered on parents of the children who were the students of Maxwell public school in Bangalore, of both sex with an age range of 6-12 years.

The final 135 items of ACPI was administered on parents of 230 children (122 boys and 108 girls). Child Personality Questionnaire[19] (CPQ) was administered on 30 children of either sex with an age range of 8-12 years.

The statistical package for social sciences (SPSS, version 10) was used for data analysis. The data were analyzed for reliability. The split-half and Cronbach's alpha tests were applied for reliability analysis. Pearson's correlation analysis was done to check the degree of association between *vata, pitta*, and *kapha* scores. Principal component analysis (factor analysis) was done to check the validity.

RESULTS

Content validity
All the 10 Ayurveda experts, who served as judges, agreed for 158 questions.

Item difficulty level
This is defined as the presence of a said symptom expressed as the percentage of children who score positive to that item.[20] The results obtained from the administration of ACPI on parents of 60 children showed 136 items that had less coefficient than 0.9 (answered, yes, by the most) and below 0.3 (answered, yes, by the less volunteers) were retained.

Internal consistency
An analysis of the data collected from 230 parents of the children showed the Cronbach's alpha for *V, P*, and *K* scales, which were 0.77, 0.55, and 0.84, respectively. The Split-half reliability for *V, P*, and *K* scales were 0.65, 0.34, and 0.84, respectively. This shows that the three scales have good internal consistency.

Correlations
The subscales (*vata, pitta*, and *kapha*) correlated significantly (negatively) with each other [Table 1].

Factor analysis
Factor analytic coefficient (by principle component analysis) obtained for each items in the scale for all V, P, and K scales for total score was more than 0.5 [Supplementary 2].

Correlation with Child Personality Questionnaire
Vata and *pitta* scale scores positively correlated with A (warm hearted vs reserved), D (excitable vs phlegmatic),

Table 1: Pearson correlation among subscales

Comparison between scales	Pearson correlation (*r*)	Significance
Vata vs Pitta	-0.16	*P*<0.05
Vata vs Kapha	-0.82	*P*<0.01
Pitta vs Kapha	-0.38	*P*<0.01

Pearson correlation between subscales. *Vata, pitta kapha* scales correlated negatively with each other suggesting convergent validity

E (dominant vs obedient), H (venturesome vs shy), N (shrewd vs forthright), 0 (guilt prone vs self-assured), Q4 (tense vs relaxed) subscales of CPQ. Negatively correlated with B (bright vs dull), C (emotionally stable vs affected by feelings), G (conscientious vs expedient), I (tender minded vs tough minded), J (internally restrained vs vigorous), Q3 (controlled vs undisciplined self-conflict) subscales of CPQ.

Similarly, *kapha* scale scores positively correlated with B, C, G, I, J, Q3 subscales of CPQ. Negatively correlated with A, D, E, H, N, O, Q4 subscales of CPQ [Table 2].

DISCUSSION

The present study has described the development and initial standardization of 136 items, parents rating, the ACPI as an instrument to assess the personality (*prakriti*) of the children.

Corelation between *vataja, pittaja*, and *kaphaja* scale scores was negative, suggesting discriminative validity. The reliability of subscales was supported by Cronbach's alpha coefficient and Split-half analysis. This provided the evidence of homogeneity of items.[21-23] The validity of items of subscales was supported by Principle component analysis. Corelation with modern CPQ revealed significant relationship between Eastern and Western personality concepts (p). Statistical significance suggests that *vata and pitta prakriti* people are extravert and vulnerable to anxiety[22] [Table 2].

Applying the inventory to children, further validated the concept of prakriti. Among selected sample, 40% were *vata-pitta*, 30% were *pitta-kapha*, 10% were *kapha*, 7% were *vata*, 8% were *sama*, and 5% were *pitta* [Table 3].

Increased score in *kapha* in early age, and *pitta, vata* in later stages supported convergent validity [Table 4].

Measuring the *prakriti* of an individual is important aspect of maintaining one's health as the equilibrium state of three *dosha* is considered as health.[1-9] One can prevent vulnerability for the somatic and psychological diseases by following different regime and personality development methods for different *dosha*. For example, person with predominance of *vata* should avoid bitter, spice, astringent taste foods, and should consume sweet, sour taste foods. The treatment modalities are also different for different prakrti.[1-9] Though published scales are available to assess the prakriti of an individual, they have been standardized for adult age group. However, children require different mode of questions. Hence, ACPI can be potentially used to identify the predominant *dosha* in children and thus

Table 2: Pearson's correlation coefficient with CPQ

CPQ scales↓	Vata	Pitta	Kapha
A	0.306	0.787**	-0.630**
B	-0.813**	-0.083	0.617**
C	-0.749**	-0.339	0.804**
D	0.704**	0.331	-0.790**
E	0.716**	0.341	-0.797**
F	-0.387*	0.511**	0.036
G	-0.735**	-0.467**	0.808**
H	0.102	0.727**	-0.424*
I	-0.661**	-0.429*	0.844**
J	-0.724**	-0.315	0.841**
N	0.711**	0.343	-0.840**
O	0.863**	0.235	-0.724**
Q3	-0.785**	-0.293	0.832**
Q4	0.768**	0.390	-0.856**

The Pearson's correlation between *vata, pitta and kapha* scale with subscales of Children Personality Questionnaire. * $P<0.05$, ** $P<0.01$

Table 3: Mean dosha scores for three different diagnostic groups

Dosha→Diagnosis ↓	Vataja	Pittaja	Kaphaja
Vata-pitta (*n*=93)	**23.7**	23.9	12.7
Pitta-kapha (*n*=66)	12.7	**22.8**	24.1
Kapha (n=24)	12.3		**32**
		13.4	
Vata (n=15)	32	12.3	**12.4**
Pitta (n=12)	12.4	32	**13.5**
Sama (n=20)	18.9	18.7	**19**

The mean values of the scoring on *vata, pitta and kapha* scales of different Prakriti category children. In which maximum score being 34 if single dosha predominant, 23,24 in two scales if double doshas are predominant

Table 4: Mean scores in different age groups

Age group	Vata	Pitta	Kapha
6–9 (*N*-110)	18.7	20.4	21.4
10–12 (*N*-120)	20.4	22.1	17.4

The scoring on *vata, pitta and kapha* subscales of different age group children. The children in the group of 6-9 scored high in *Kapha* scales and of age group 10-12 scored high in Vata scale.

help to plan suitable regime at an early age to maintain the health. Studies should be conducted on larger sample and norms should be established. The present scale has the limitation mainly because of parent influence , at the same time the comprehensive approach of analyzing *prakriti* and paper-pencil mode are the strength of this work.

CONCLUSIONS

An ACPI is a consistent and valid instrument. *Tridosha* measure may point out to lifestyle management to prevent the disease and main the health of the children. Researchers can employ this instrument to assess the effect of Yoga, personality development program on the *prakriti* of the children.

Suchitra, *et al*.: Ayurveda child *prakriti* inventory

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