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Development of tools of *Prakriti* assessment in neonates- A cross sectional study

Research Article

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Abstract

Prakriti (body constitution) is amalgamation of psychosomatic traits. The inherited features depend upon shukra(sperm) and shonita(ovum), whereas acquired features develop due to environmental elements. Aim of this contemporary study is to assess *Prakriti* of neonates by psychosomatic and neurological characteristics and objectives are to prepare a comprehensive proforma to assess *Prakriti (body constitution)* in neonates by using subjective criteria, psychosomatic and neurological characteristics. Material & methods: A total of 100 neonates fulfilling inclusion criteria were enrolled from OPD, IPD of MGACH & RC, DMIHER and NICU, A.V.B.R.H., Sawangi, Wardha, Maharashtra and this prevailing study was conducted as a survey study using a validated questionnaire. Compilation of a comprehensive list of distinctive traits (predictors) for *Prakriti* evaluation found in Ayurvedic texts (grouping of items) was used to create N-PAS. Observations & Result: 100 neonates were taken and after applying frequency distribution in descriptive statistics and one-way ANOVA in inferential statistics to compare concerned parameters in the N-PAS with anthropometrical measurements, it was observed that *Kapha-Vataj Prakriti* was found to be more dominant with 27% because in early childhood, *kapha dosha* is found to be the paramount one. Discussion and Conclusion: This study has a vital role in determining the role of *Prakriti* in promotion of health, *agni* status of individual, determination of *bala*/ strength, diagnosis, management of diseases, prognosis, decision of preventive medicine, determination of genomic relevance with *doshik* predominance. N-PAS (comprehensive neonatal *Prakriti* assessment scale) was formed and by analytical statistics, *Kapha-Vataj Prakriti* (27%) was found to be more dominant.

Keywords: *Prakriti,* Idiosyncrasy, Comprehensive Prakriti assessment scale, Individual constitution*, Dwidoshaj Prakriti*.

Introduction

The term *Prakriti* means "nature"/ body constitution. *Prakriti* is amalgamation of psychosomatic traits in human beings. Human *Prakriti* comprises both inherited and acquired components. The inherited features depend upon *shukra*(sperm) and *shonita*(ovum), whereas acquired features develop as a result of environmental elements such as weather, season, time factor, age, race, and family heredity. The predominant *dosha* among the three bodily humours (*vata, pitta, kapha*) during the fertilisation of *shukra* (sperm) and *shonita* (ovum) generates *Prakriti* (1). *Acharya Charak* and *Acharya Vagbhatt* have explained that *Prakriti* does not only affect *shukra shonita samyoga* but also on time, dietary regimens and behaviour of pregnant mother, condition of the uterus and five cosmic elements. (2) *Acharya Charak* also mentioned, both *Prakriti (body constitution)* and *Vikriti (pathological deviation from normal body constitution)* are under the influence of the causes. *Acharya Kashyap* has designated the foetus as life nurtured by the pregnant mother hence *Prakriti* is designed since birth. (3) These *Prakriti* are mostly of three varieties, with *vata, pitta,* and *kapha (body humors)* preponderance. (4)

According to *Sushrut*, development of *Prakriti* occurs due to *tridosha* situation during the fertilisation of *shukra* and *shonita/artava* and *Ekadoshaj Prakriti (V, P, K)* or *Dwidoshaj Prakriti (V-P, P-K, K-V)* or *Tridoshaj Prakriti (VPK* in equal proportions) are formed *Prakriti* is not the result of fluctuating *dosha*. *Prakriti* is caused by *Dosha*, which remains continuous from birth to death. *Prakriti*, once developed, is impacted but not altered by external conditions. Variation is so difficult that any significant alteration in original characteristics should be considered carefully by an Ayurvedic consultant. (5) Ayurveda is a life science that attempts to keep individuals healthy as well as to cure ailments of individuals. Health is the equilibrium state of *Tridosha* i.e*., Vata, Pitta & Kapha. Prakriti* of an individual is also determined based on relative predominance of *Dosha* within physiological

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limit at the time of formation of *Garbha* (Embryo). (6) The determination of *Prakriti* has significant importance in individual's physical, physiological, psychological, and behavioural assessment, in both healthy and unhealthy states. (7) Choice of drug, its dose and even diet prescription varies with *Prakriti*. As a result, the idea of *Prakriti*, or "individual constitution," has developed as an intriguing subject for scholars. (8) Currently, physicians, academics, and research organisations are employing several questionnaires to measure *Prakriti* that are based on one or more classics. However, the existing questionnaires lack standardisation in terms of content, structure, and procedures for capturing each predictor for *Prakriti* evaluation. (9) This makes variation in the determination of *Prakriti* across time and space. Considering the importance of *Prakriti* assessment, development of a validated questionnaire is imperative. The acquisition of each predictor is therapeutically significant in determining the *Prakriti*. The term '*Prakriti*' also refers to an individual's inherent condition or nature. (10) According to Ayurved, the primary elements of this physical cosmos, including the human body, are *Panchmahabhuta* (*Akash, vayu, teja, jala, and prithvi*) which eventually become *tridosha (vata, pitta, and kapha*). (11) Though the *dosha* exist in every human being, one is dominant, and this determines the person and *Prakriti*. *Prakriti* are unique phenotypes defined by neurological, biological, and behavioural characteristics that are not influenced by social, ethnic, or geographical influences. (12) *Prakriti* (individual constitution) is defined by the *dosha* (functional components of the body) situated in *shukra* and *shonita* from the moment of fertilisation. *Prakriti* is a fundamental Ayurvedic context that explains idiosyncrasy/ uniqueness. It expresses an individual's distinctive characteristic, which is characterised by a particular and permanent *dosha* composition from birth. (13) Till date studies have been conducted on standardization of tools of *Prakriti* assessment in infants based on physical characteristics & through related software. In the present study, it was planned to assess the concepts and parametric tools for neonates by using subjective criteria according to Ayurvedic context, psychosomatic and neurological traits. To avoid the above gaps, this study was done for evaluation of *Prakriti* in neonates.

Material and methods

A comprehensive neonatal *Prakriti Assessment Scale (PAS)* was developed by adopting the following methods and development of a questionnaire for *Prakriti* assessment by:

- Compilation of a comprehensive list of distinctive traits (predictors) for *Prakriti* evaluation found in Ayurvedic texts (grouping of items)
- Predictors were reduced.
- Each predictor's capture technique was formed.

Selection of Patients: A total of 100 neonates fulfilling the inclusion criteria were enrolled & recruited from OPD and IPD of MGACH & RC, DMIHER, Salod, Wardha and NICU, A.V.B.R.H., Sawangi, Wardha, Maharashtra and this prevailing study was conducted as a survey study using a validated questionnaire.

Table 1: Showing inclusion and exclusion criteria of enrolled patients

Sl.No.	Inclusion criteria	Exclusion criteria
1	Healthy neonates whose parents are willing to give consent. (28days)	Neonates having congenital anomalies, chromosomal abnormalities, birth injuries and in need of intensive care/ having low APGAR scores.
2	Full Term Normal Delivery/ Uncomplicated spontaneous vaginal delivery and elective Lower Segment Cesarean Section	Pre-term and post-term neonates, and those having central line/ PICC line/ umbilical line
3	Neonates not having signs of fetal distress/ growth retardation.	Any antenatal insults/ injuries to the mother during parturition.
4	--	Instrument-assisted delivery (forceps delivery, ventouse delivery) and obstructed labor.

Ethical clearance: The ethical committee clearance number is MGACHRC/IEC/Mar-2023/693 dated on 23/03/2023.

Assessment of *Prakriti*: A *N-PAS* (Comprehensive neonatal *Prakriti* Assessment Scale) was prepared having all psychosomatic and neurological traits. The questionnaire contained 21 traits/predictors for the evaluation of *Prakriti* in neonates. Each trait was assigned three chief attributes according to *doshik* predominance (*V, P, K*) and dominant *Prakriti* was assigned the first place followed by the less dominant *dosha* among all the 21 traits. Questionnaire generally included *Trividha Pariksha (Darshan, Sparshan and Prasna)* as mentioned in the context of Ayurveda. Each question was either observed or palpated clinically by physical examination or interrogated by the participant's mother and simultaneously ticked under specific *dosha*.

Table 2: Prakriti assessment format in neonates

Sl. No.	Parameters Physical parameters	Assessment method	Procedure	Observations	V	P	K
1. Anthropometry		**Measurement**	Weight, CHL, HC and CC are to be measured as per the recommended guidelines. On the basis of growth velocity will be measured to find out the difference among the different *Prakriti* specific population at the given age.	a) Minimum weight, CHL, HC, CC- V b) Moderate weight, CHL, HC, CC- P c) Maximum weight, CHL, HC, CC- K Normal range Weight= 2.6-3.3kg(V) 2.8-3.6kg(P) 3.4-4.3kg(K) CHL= 48.7-50.8cm(V) 49-51.2cm(P) 49.8-52.5cm(K) HC= 33.3-35.2cm(V) 33.7-35.1cm(P) 34.7-36.6cm(K) CC= 31.3-33cm(V) 31.4-33.5cm(P) 31.5-34.6cm(K)			
2. *Dehaakriti*(body built)		**Inspection and from the above anthropometric measurements**	Body built is to be observed according to the day of life	a) *Apachita, krisha, krishadirghakriti*(lean built)- V b) *Durbhaga, Madhya sharira*(moderate body built)-P c) *Subhaga, sthirasharira*(strong and stout body built)-K			
3. Frame of arms		**Inspection**	Frame of the arms is to be observed through measurement by one's own fingers	a) Long & thin- V b) Medium- P c)Tough, thick & well-built- K			
4. Skin		**Inspection and Palpation**					
i)	**Texture & Feel**		The skin of the baby is observed and felt throughout the body except palms & soles for its texture and feel.	a) Dry and cold - V b) Slightly unctuous and warm - P c) Unctuous, smooth and cold – K			
ii)	**Complexion**		The skin of the baby is observed in day light for complexion.	a) Dark – V b) Medium - P c) Fair – K			
iii)	**Body hair**		Closely observe the body hairs of the baby in day light and feel gently for the texture.	a) Thin & sparse – V b) Moderate & brown hairs - P c) Thick & dark – K			
iv)	**Birth marks**		Whole body of the neonate is observed for birth marks.	a) Few and dark coloured b) Multiple and reddish coloured c) Nil			
5. Scalp hair		**Inspection**	The scalp hair has to be observed carefully for the colour and appearance and felt for the texture.	a) Light coloured, thin, dry, sparse and straight - V b) Brownish, moderately thick, shiny and wavy- P c) Dark, thick, shiny and curly- K			
6. Palms & soles							
		Inspection and palpation	Palms and soles have to be observed closely for size, shape, fingers, toes, nails and felt for the feel and temperature.	a) Dry, thin, pale pink, small and with numerous creases, short, thin fingers & toes with thin & small nails- V b) Soft, moderately fleshy& unctuous, pink, warm with moderately fleshy fingers & toes with medium sized nails - P c) Fleshy, unctuous, pink, broad and less but with deep creases and fleshy and long fingers & toes with thick nails- K			

7. Forehead	**Inspection**	Observe for the hairline and breadth of the forehead.	a) Small- V b) Medium sized- P c) Large – K	
8. Eyebrows and eyelashes	**Inspection**	Eyebrows and eyelashes are to be observed for colour and texture	a) Scanty & irregular- V b) Scanty & brownish- P c) Dense, smooth & moist- K	
9. Eyes	**Inspection**	Eyes are observed for size and shape	a) Small sized, lacks glow, round, unsteady, remains partially open during sleep- V b) Medium, yellowish/reddish- P c) Almond sized and beautiful- K	
10. Sclera	**Inspection**	Sclera is observed for colour	a) Smoky, blackish- V b)Yellowish/reddish- P c) White, glowing- K	
11. Iris (ophthalmoscope/split lamp)	**Inspection**	Iris is observed for colour	a) Blackish- V b) Blue/ green/ grey- P c)Black- K	
12. Nose	**Inspection**	Nose is observed for size and skin covering	a) Small with thin covering skin- V b) Intermediate- P c) Big with thick covering skin- K	
13. Lips	**Inspection**	Lips are to be observed for colour, size and texture.	a) Dry, small, cracked- V b) Thin, small, red- P c) Thick, moist, big- K	
14. Tongue	**Inspection**	Tongue is to be observed for texture	a) Dry, small, cracked- V b) Thin, red, small-P c) Thick, moist, fleshy-K	
Physiological Parameters				
15	**Reflexes**			
i)	**Stepping**	**Clinical examination**	The neonate is held in upright position over a flat surface and observed for whether the neonate places his/her feet over the surface and places one foot in front of the other as if trying to walk	a) Fastly places the feet and inconsistent- V b) Places the feet in moderate pace with delayed initiation- P c) Slowly places the feet but firmly- K
ii)	**Rooting**		A gentle touch or stroke is given over the cheek/corner of the mouth of the neonate and is observed for turning his/her head towards the stimuli	a) Quickly- V b) In moderate pace- P c) Slowly- K
iii)	**Sucking**		When a clean finger is placed near lips the neonate tends to suck the finger as if in feeding	a) Fast and inconsistent- V b) Moderate pace and strength in sucking- P c) Slow but strong sucking- K
iv)	**Palmar grasp**		The finger is placed over the palm of the neonate. The neonate tends to grasp the finger and tries to get up when pulled up.	a) Fast and inconsistent – V b) Moderate pace and strength of grasp- P c) Slow and strong grasp- K
16. Cry		**Interrogation**		
i)	**Pitch/ Volume**		The mother/ care taker is asked about the cry of the baby about the nature and pitch/ volume.	a) Loud/ High- V b) Medium- P c) Low – K
ii)	**Cause of cry**		The mother/ care taker is asked about the cause of the cry of the baby.	a) Light- V b) Sound- P c) Tactile- K
iii)	**Stoppage of cry**		The mother/ care taker is asked about the nature of stoppage of the cry.	a) Skin contact of the care taker- V b) Consoling words/actions- P c) Self-limiting- K
17. Activity		**Inspection**	The activity is observed frequently through synchronous movement of limbs	a) Restless, quick- V b) At times restless, medium- P c) Lethargic movement, Sleepy-K

18. Feeding history	**Interrogation**	The mother is interrogated for frequency of breast feeding and appetite of the neonate	a) Light hunger & irregular appetite- V b) Frequent hunger & increased appetite- P c) Less hunger & poor appetite- K			
19. *Kostha* (bowel movements)	**Interrogation**	The mother is interrogated for the colour, consistency and frequency of bowel	a) *Krura*, black, hard, irregular, constipated- V b) *Mridu*, yellowish or greenish, regular, clear- P c) *Madhyama*, whitish, regular, clear sometimes with mucous, sticky- K			
20. Vital Signs	**Palpation**	The rate, rhythm, character and volume of the pulse is observed along with respiratory rate	a) Thready pulse with more volume & high respiratory rate- V b) Moderate pulse rate & respiratory rate- P c) Feeble pulse & low respiratory rate- K			
21. Sleep	**Interrogation**	The mother is interrogated about the sleep pattern	a) *Jagruk*- immediate awakening due to any sound- V b) sound or intermediate sleep- P c) Deep sleep/ not bothered by any sounds- K			
no score was given through points. Only sleep was categorized according to pre-dominance of dosha.						

Abbreviations:

Abbreviation	Expansion
V	Vata
P	Pitta
K	Kapha
CHL	Crown heel length
HC	Head circumference
CC	Chest circumference

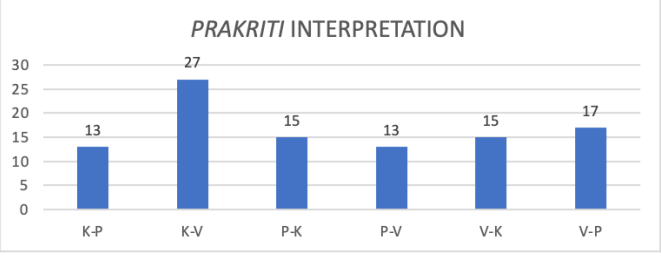
Observations and Results

A total of 100 neonates fulfilling the inclusion criteria were enrolled & recruited from OPD and IPD of MGACH & RC, DMIHER, Salod, Wardha and NICU, A.V.B.R.H., Sawangi, Wardha, Maharashtra and this prevailing study was conducted as a survey study using a validated questionnaire.

Table 3: Descriptive Statistics

		Frequency	Percent
Prakriti interpretation	K-P	13	13.0
	K-V	27	27.0
	P-K	15	15.0
	P-V	13	13.0
	V-K	15	15.0
	V-P	17	17.0
	Total	100	100.0

Figure 1: Prakriti interpretation



Prakriti is categorized into *Kapha & Pitta (K-P), Kapha & Vata (K-V), Pitta & Kapha (P-K), Pitta & Vata (P-V), Vata & Kapha (V-K), Vata & Pitta (V-P). Kapha & Pitta (K-P)* found with frequency 13(13%), *Kapha & Vata (K-V)* found with frequency 27(27%), *Pitta & Kapha (P-K)* found with frequency 15(15.0%), *Pitta & Vata (P-V)* found with frequency 13(13%), *Vata & Kapha (V-K)* found with frequency 15(15%), *Vata & Pitta (V-P)* found with frequency 17(17.0%).

Inferential Statistics

Comparative assessment was done in 100 samples among anthropometric measurements and all physical and psychological traits using one way ANOVA Test.

Physical traits

For assessment of *DEHA AKRITI* (body built), comparison with weight, results with F-value 49.85293, highly significant difference was found between the groups for weight (kg) as P-value < 0.01. For CHL assessment, results with F-value 32.062, highly significant difference was found between the groups for weight (kg) as P-value < 0.01. HC assessment shows highly significant difference between the groups for weight (kg) as P-value < 0.01. CC assessment shows highly significant difference between the groups for weight (kg) as P-value=0.002 >0.05.

For the assessment of FRAME OF ARMS, comparison with weight highly significant difference was found between the groups for weight (kg) as P-value < 0.01, comparison with CHL, highly significant difference was found between the groups for weight (kg) as P-value =0.012< 0.05, comparison with HC, highly significant difference was found between the groups for weight (kg) as P-value < 0.01, comparison with CC, highly significant difference was found between the groups for weight (kg) as P-value=0.003 <0.05.

For the assessment of TEXTURE & FEEL OF SKIN, comparison with weight, results with F-value 6.506, highly significant difference was found between the groups for weight (kg) as P-value =0.002< 0.05, for CHL assessment, results with F-value 7.76, highly significant difference was found between the groups for weight (kg) as P-value =0.001< 0.05, HC assessment results with F-value 18.297, highly significant difference was found between the groups for weight (kg) as P-value < 0.01, CC assessment results with F-value 1.275, non- significant difference was found between the groups for weight (kg) as P-value=0.284 >0.05.

For the assessment of COMPLEXION, comparison with weight, results with F-value 7.66, highly significant difference was found between the groups for weight (kg) as P-value =0.001< 0.05, for CHL assessment results with F-value 13.037, highly significant difference was found between the groups for weight (kg) as P-value =0.01< 0.05, while HC and CC assessment results did not show any significant comparison.

For the assessment of BODY HAIR, comparison with weight, results with F-value 0.692, non- significant difference was found between the groups for weight (kg) as P-value =0.503>0.05, for CHL assessment results with F-value 1.111, non- significant difference was found between the groups for weight (kg) as P-value =0.334> 0.05, while HC and CC assessment results did not show any significant comparison.

For the assessment of BIRTH MARKS, weight and chest circumference did not show any significant comparison but CHL and HC assessment results with F-value 8.859, highly significant difference was found between the groups for weight (kg) as P-value =0.01<0.05 and with F-value 11.753, highly significant difference was found between the groups for weight (kg) as P-value =0.01<0.05 respectively.

For assessment of SCALP HAIR, weight, CHL, HC showed significant results with F-value 6.222, highly significant difference was found between the groups for weight (kg) as P-value =0.003<0.05, F-value 0.205, highly significant difference was found between the groups for weight (kg) as P-value =0.815<0.05, F-value 9417, highly significant difference was found between the groups for weight (kg) as P-value =0.01<0.05 respectively whereas CC had no significant comparison with this trait.

For the assessment of PALMS AND SOLES, weight, HC, CC showed highly significant results with F-value 4.104, highly significant difference was found between the groups for weight (kg) as P-value =0.019<0.05, F-value 34.711, highly significant difference was found between the groups for weight (kg) as P-value =0.01<0.05, F-value 4.275, highly significant difference was found between the groups for weight (kg) as P-value=0.017<0.05 respectively and CHL did not show any significant comparison with this trait.

For the assessment of FOREHEAD, comparison with weight and CHL, results with F-value 7.86, highly significant difference was found between the groups for weight (kg) as P-value =0.001<0.05 and F-value 15.747, highly significant difference was found between the groups for weight (kg) as P-value =0.01<0.05 respectively. HC and CC did not show any significant comparison.

For the assessment of EYEBROWS & EYELASHES, comparison with weight, HC and CC, results with F-value 6.792, highly significant difference was found between the groups for weight (kg) as P-value =0.002<0.05, F-value 18.959, highly significant difference was found between the groups for weight (kg) as P-value =0.01<0.05, F-value 3.86, highly significant difference was found between the groups for weight (kg) as P-value=0.024<0.05 respectively and CHL did not have any significant comparison with this trait.

For assessment of EYES, comparison with weight, CHL, HC, CC, results with F-value 6.017, highly significant difference was found between the groups for weight (kg) as P-value =0.003<0.05, F-value 20.046, highly significant difference was found between the groups for weight (kg) as P-value =0.01<0.05, F-value 5.242, highly significant difference was found between the groups for weight (kg) as P-value =0.007<0.05, F-value 5.242, highly significant difference was found between the groups for weight (kg) as P-value =0.007<0.05 respectively.

For assessment of SCLERA, comparison with weight, CHL, HC, CC, results with F-value 9.269, highly significant difference was found between the groups for weight (kg) as P-value =0.01<0.05, F-value 5.536, highly significant difference was found between the groups for weight (kg) as P-value =0.005<0.05, with F-value 13.741, highly significant difference was found between the groups for weight (kg) as P-value =0.01<0.05, F-value 6.454, highly significant difference was found between the groups for weight (kg) as P-value=0.002<0.05 respectively.

For assessment of IRIS, comparison with weight, CHL, HC, CC, results with F-value 23.644, highly significant difference was found between the groups for weight (kg) as P-value =0.01<0.05, F-value 18.14, highly significant difference was found between the groups for weight (kg) as P-value =0.01<0.05, F-value 45.345, highly significant difference was found between the groups for weight (kg) as P-value =0.01<0.05, F-value 17.923, highly significant difference was found between the groups for weight (kg) as P-value=0.01<0.05 respectively.

For assessment of NOSE, comparison with weight, CHL, HC, CC, results with F-value 4.881, highly significant difference was found between the groups for weight (kg) as P-value =0.01<0.05, F-value 24.363, highly significant difference was found between the groups for weight (kg) as P-value =0.01<0.05, F-value 14.829, highly significant difference was found between the groups for weight (kg) as P-value =0.01<0.05, F-value 8.151, highly significant difference was found between the groups for weight (kg) as P-value=0.001<0.05 respectively.

For assessment of LIPS, comparison with weight, CHL, HC, results with F-value 7.687, highly significant

difference was found between the groups for weight (kg) as P-value =0.001<0.05, F-value 3.303, highly significant difference was found between the groups for weight (kg) as P-value =0.041<0.05, F-value 16.456, highly significant difference was found between the groups for weight (kg) as P-value =0.01<0.05 respectively. CC did not show any significant comparison.

For assessment of TONGUE, comparison with weight, CHL, HC, results with F-value 9.545, highly significant difference was found between the groups for weight (kg) as P-value =0.01<0.05, F-value 3.738, highly significant difference was found between the groups for weight (kg) as P-value =0.027<0.05, F-value 15.408, highly significant difference was found between the groups for weight (kg) as P-value =0.01<0.05 respectively. CC did not show any significant comparison.

Physiological traits

For assessment of STEPPING REFLEX, comparison with weight, CHL, HC, results with F-value 9.832, highly significant difference was found between the groups for weight (kg) as P-value =0.01<0.05, F-value 11.578, highly significant difference was found between the groups for weight (kg) as P-value =0.01<0.05, F-value 6.681, highly significant difference was found between the groups for weight (kg) as P-value =0.002<0.05 respectively. CC did not show any significant comparison.

For assessment of ROOTING REFLEX, comparison with weight, CHL, HC, CC, results with F-value 4.173, highly significant difference was found between the groups for weight (kg) as P-value =0.018<0.05, with F-value 12.584, highly significant difference was found between the groups for weight (kg) as P-value =0.01<0.05, with F-value 15.571, highly significant difference was found between the groups for weight (kg) as P-value =0.01<0.05, F-value 3.491, highly significant difference was found between the groups for weight (kg) as P-value=0.034<0.05 respectively.

For assessment of SUCKING REFLEX, comparison with weight, CHL, HC, CC, results with F-value 3.87, highly significant difference was found between the groups for weight (kg) as P-value =0.024<0.05, F-value 14.254, highly significant difference was found between the groups for weight (kg) as P-value =0.01<0.05, F-value 14.153, highly significant difference was found between the groups for weight (kg) as P-value =0.01<0.05, F-value 3.25, highly significant difference was found between the groups for weight (kg) as P-value=0.043<0.05 respectively.

For assessment of PALMAR GRASP, comparison with weight, CHL, HC, results with F-value 11.316, highly significant difference was found between the groups for weight (kg) as P-value =0.01<0.05, F-value 12.412, highly significant difference was found between the groups for weight (kg) as P-value =0.01<0.05, F-value 8.231, highly significant difference was found between the groups for weight (kg) as P-value =0.01<0.05 respectively. CC did not show any significant comparison.

For assessment of PITCH/ VOLUME OF CRY, comparison with weight, CHL, HC, CC, results with F-value 5.494, highly significant difference was found between the groups for weight (kg) as P-value =0.005<0.05, F-value 9.866, highly significant difference was found between the groups for weight (kg) as P-value =0.01<0.05, F-value 8.564, highly significant difference was found between the groups for weight (kg) as P-value =0.01<0.05, F-value 6.907, highly significant difference was found between the groups for weight (kg) as P-value=0.002<0.05 respectively.

For assessment of CAUSE OF CRY, comparison with weight, CHL, HC, CC, results with F-value 5.494, highly significant difference was found between the groups for weight (kg) as P-value =0.005<0.05, F-value 9.866, highly significant difference was found between the groups for weight (kg) as P-value =0.01<0.05, F-value 8.564, highly significant difference was found between the groups for weight (kg) as P-value =0.01<0.05, F-value 6.907, highly significant difference was found between the groups for weight (kg) as P-value=0.002<0.05 respectively.

For assessment of STOPPAGE OF CRY, comparison with weight, CHL, HC, CC, F-value 5.135, highly significant difference was found between the groups for weight (kg) as P-value =0.008<0.05, F-value 9.377, highly significant difference was found between the groups for weight (kg) as P-value =0.01<0.05, F-value 8.044, highly significant difference was found between the groups for weight (kg) as P-value =0.001<0.05, F-value 7.212, highly significant difference was found between the groups for weight (kg) as P-value=0.001<0.05 respectively.

For assessment of ACTIVITY, comparison with weight, CHL, HC, CC, results with F-value 0.045, highly significant difference was found between the groups for weight (kg) as P-value =0.956<0.05, F-value 0.045, highly significant difference was found between the groups for weight (kg) as P-value =0.956<0.05, F-value 9.35, highly significant difference was found between the groups for weight (kg) as P-value =0.01<0.05, F-value 3.526, highly significant difference was found between the groups for weight (kg) as P-value=0.033<0.05 respectively.

For assessment of FEEDING HISTORY, comparison with weight, HC, CC, results with F-value 2.393, highly significant difference was found between the groups for weight (kg) as P-value =0.097<0.05, F-value 20.234, highly significant difference was found between the groups for weight (kg) as P-value =0.01<0.05, F-value 4.746, highly significant difference was found between the groups for weight (kg) as P-value=0.011<0.05 respectively. CHL did not show any significant comparison.

For assessment of *KOSTHA*/BOWEL MOVEMENTS, comparison with weight, HC, CC, F-value 3.739, highly significant difference was found between the groups for weight (kg) as P-value =0.027 <0.05, F-value 28.305, highly significant difference was

found between the groups for weight (kg) as P-value =0.01<0.05, F-value 7.489, highly significant difference was found between the groups for weight (kg) as P-value=0.001<0.05. CHL did not show any significant comparison.

For assessment of VITAL SIGNS, comparison with weight, CHL, HC, results with F-value 7.149, highly significant difference was found between the groups for weight (kg) as P-value =0.001 <0.05, F-value 15.198, highly significant difference was found between the groups for weight (kg) as P-value =0.01<0.05, F-value 18.199, highly significant difference was found between the groups for weight (kg) as P-value =0.01<0.05 respectively. CC did not show any significant comparison.

For assessment of SLEEP, comparison with weight, CHL, HC,CC, results with F-value 16.596, there found highly significant difference between the groups for weight (kg) as P-value =0.01<0.05, F-value 21.32, there found highly significant difference between the groups for weight (kg) as P-value =0.01<0.05, F-value 25.941, there found highly significant difference between the groups for weight (kg) as P-value =0.01<0.05, F-value 5.772, there found highly significant difference between the groups for weight (kg) as P-value=0.004<0.05 respectively.

Discussion

Prakriti is the equilibrium condition of *dosha*, which is an individual's normal and healthy constitution, whereas *Vikriti* is the diverse status of *dosha,* which is indicated by the emergence of a disease. (14) Prevention and management of sickness may begin at an early stage based on exact *Prakriti* evaluation. *Prakriti* evaluation is one of the ten cardinal instruments of patient examination in Ayurveda. (15) Because there have only been a few research studies on *Prakriti* evaluation in both children and adults, the present study data is quite limited. Researchers used physical characteristics of participants in these investigations through the questionnaire approach. *Prakriti* was thought to rely not only on an individual's bodily characteristics but also on psychosomatic and neurological characteristics. The research pattern was utilised as a preparation tool to analyse *Prakriti*. Because the approach utilised in the study was limited to the physical components of *Prakriti*, this cannot be considered a full assessment of *Prakriti*. (16) *Prakriti* examination was possible in stable patients suffering from common mental diseases utilising the Ayu Soft software. It was revealed that the Ayu Soft device's diagnosis of *Prakriti* in this group was comparable to the clinical knowledge of two Ayurvedic specialists. Ayu Soft might help in the development of comprehensive and personalized therapies for mental diseases. (17) The *Prakriti* analysis app uses a visual triangle to make it easy to record, preserve, and share a *Prakriti* evaluation with the patient. The notion proposed here was a strategy for deploying health record banks in a cost-effective and sustainable manner. There is a distinction between physiological and pathological characteristics in children. This would allow other researchers in the field to test or enhance their tools, perhaps leading to the formation of a standard technique. (18) At this point, the information that *Prakriti* is the genetic composition of a human being is provided because of the good conclusions that have naturally emerged from the examination of the accessible idea. (19) This was the impetus for developing the current study, which aimed to create a *Prakriti* evaluation instrument known as N-PAS and assess *Prakriti* in chosen neonates. To determine the prevailing *dosha*, the *Prakriti* assessment scale was designed using a validated questionnaire. This examination allowed for the recommendation of corrective actions for a variety of mild to significant diseases in infancy, as well as the planning of treatment protocols. According to Ayurveda, there is a defined role of *Prakriti* during newborn care plays a critical part in preserving good health in the future ahead. As per the *Prakriti* of the neonates, appropriate drugs are mentioned to be mixed in the water and used for bathing such as decoction of *Ksheerivriksha* in case of *Pitta* dominance, decoction of *Eladi gana dravya* in case of *Vata* dominance, dipping of red heated gold or silver bar in lukewarm water and decoction of *Kapittha patra* in case where foetus takes very long time to pass vaginal orifice during parturition. (20) *Aptopadesa* (Classical facts gained from sage wisdom), *Pratyaksha* (Direct perception), *Anumana* (Inference), and *Yukti* (Coherence) are the four basic forms of *Pramana* (tools that help in the acquisition of knowledge) that Ayurveda highlights. In this study, *Aptopadesha* (classical facts) and *Pratyaksha Pramana* will be used to investigate *Prakriti* with *Prashna pariksa. Pratyaksha Pramana* (direct perception) is a validating method for knowledge in the form of patient inspection that may be utilized as a rapid technique to assess *Prakriti* on a wide level. (21) Only considering the physical characteristics would not have been sufficient. As a result, the current study is intended to analyze *Prakriti* at a fundamental level by analyzing the participants' physical, psychological, and neurological features, making it more suitable for a therapeutic context. The parents/guardians of the selected newborns are expected to spend an average of 10-15 minutes completing the *Prakriti* questionnaire evaluation. (22)

Some variables have a direct impact on child growth, whereas others do not. Majority of the requirements are *prashna pariksha* (history taking) in nature. When learning history, one must form one's own opinion regarding a mother's memories. (23) *Prakriti* evaluation is essential in Ayurveda practice, prompting different scholars and Ayurveda practitioners to create diverse approaches. Statistical analysis involved both descriptive and inferential analysis. The parameters in the questionnaire were used to evaluate *Prakriti* in the c-PAS (comprehensive *Prakriti* assessment scale) and were compared among themselves in 100 participants. Thus, *Prakriti* assessment in neonates was carried out by creating a *C-PAS* taking all the previous researches done and some having the lacunae of taking only physical parameters into consideration. The present

research depicts the necessity of exploring traditional Ayurvedic concepts and adheres to using modern scientific techniques, which may provide novel knowledge of value in the application of medicine.

Limitations and recommendation of this study

Limitations

It is crucial to understand that the Ayurvedic *Prakriti* evaluation is a qualitative assessment and could not offer a conclusive diagnosis of medical issues. The evaluation should be always utilised in conjunction with a traditional medical evaluation, diagnostic tests, and evaluations performed by authorised healthcare experts.

Recommendation

This questionnaire can be used in OPD and IPD levels to assess *Prakriti* of the patients consulting the physician. It can be used in larger sample size for long-term studies for diagnostic ease, to plan management protocol and decide the prognosis in childhood disorders.

Conclusion

In Ayurveda, *Prakriti* evaluation can provide the vital insights into the newborn's intrinsic characters to facilitate healthcare practitioners in the preventive measures and selection of personalised treatment methods as well as prognosis and diagnosis. To achieve the greatest possible care and outcomes for the neonate, it should be utilised in combination with current medical examination. It is always necessary to seek the advice of trained healthcare specialists for thorough and safe neonatal healthcare procedures.

In this study, aim was to assess *Prakriti* in neonates through psychosomatic, physical, physiological, and neurological characteristics in clinical practice. So, a questionnaire was formed to assess *Prakriti* by observation and interrogation from the subject's mother. Each trait/ parameter was assigned *V, P, K (Vata, pitta, kapha* respectively) and frequency distribution was observed. By using one way ANOVA test, physical and physiological traits were compared with anthropometric measurements individually and tests of significance were observed. It was found that *Kapha- Vataj Prakriti* (27%) was found to be more dominant as in childhood, *kapha dosha* remains predominant. So, this c-PAS (comprehensive *Prakriti* assessment scale) can be used in clinical practice to diagnose earlier childhood disorders.

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