

PRAKRITI AND MORBIDITY PATTERNS AMONG SCHOOL-GOING CHILDREN: A PILOT STUDY

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ABSTRACT

Background: Prakriti is a key determinant in disease prevention, diagnosis, treatment, and prognostication. Children are more susceptible to various morbidities in the school going age. This study examines the association between childhood morbidity patterns and Prakriti in the contemporary health scenario.

Objective: To assess the association between Prakriti (Ayurvedic constitutional types) and morbidity patterns among school-going children. As evidence on this relationship is limited, this pilot study aims to explore the preliminary association and generate baseline data for future research.

Materials and Methods: A pilot cross-sectional observational study was conducted among school-going children. Prakriti was assessed using a self-structured questionnaire, while morbidity patterns were assessed using body region/system-wise checklist based on participants' health history and direct observation.

Observation and Results: A pilot study was conducted on 50 children assessed for dominant Prakriti and classified as Vata (24%), Pitta (14%), and Kapha (62%). Conditions were recorded based on observational method. Hair conditions were the most common (48%). Pitta dominant children showed the highest proportional prevalence of hair conditions (71.4%), mainly hair loss and scalp acne. Vata Prakriti was associated with early greying, dry and brittle hair, nervous conditions instability, and musculoskeletal conditions. Kapha Prakriti predominantly exhibited dandruff, greasy hair, and respiratory and nasal conditions. Although clear trends were observed across Prakriti types, statistical significance was limited due to the small sample size.

KEYWORDS: Ayurveda, Vata, Pitta, Kapha, School-going children and Morbidity Patterns.

INTRODUCTION

Ayurveda conceptualizes Prakriti as an individual's inherent constitutional makeup determined by the relative predominance of the dosha i.e. Vata, Pitta and Kapha, which together shape physical, physiological, and psychological characteristics and influence susceptibility to disease, response to treatment, and long term health outcomes.¹

Classical Ayurvedic texts describe Vata as being characterized by roughness (Ruksha), lightness (Laghu), mobility (Chala), swiftness (Shighra), and coldness (Sheeta); Pitta by heat (Ushna), sharpness (Tikshna), and liquidity (Drava); and Kapha by unctuousness (Snigdha), softness (Mridu), density (Sandra), heaviness (Guru), and stability (Sthira).

Recent biomedical investigations have started to correlate Prakriti classifications with measurable phenotypes, including metabolic profiles, immune markers, and disease predisposition in adults, suggesting that traditional constitutional types may have translational relevance to modern health science. Despite this emerging body of work, the applicability of Prakriti theory to paediatric populations remains underexplored.²

School aged children represent a critical cohort for preventive health research. This developmental stage not only establishes lifelong physiological and behavioral trajectories but also carries a distinct burden of morbidity commonly involving the integumentary (hair/skin/nail), respiratory, gastrointestinal, and musculoskeletal conditions that can adversely affect growth, school attendance, and quality of life. Classical Ayurvedic descriptions propose that Prakriti influences such morbidity patterns from early life; for example, Pitta dominance is traditionally linked with hair thinning and inflammatory skin conditions, Vata with dryness and neuromotor conditions, and Kapha with oiliness, dandruff, and respiratory susceptibility. Empirical evaluation of these assertions in children is limited, and pilot data are necessary to generate preliminary prevalence estimates, clarify clinical patterns, and guide larger confirmatory studies.^{3,4}

The present pilot cross sectional observational study was undertaken to examine associations between dominant Prakriti types and system wise morbidity patterns among school going children in Varanasi. Using a self structured Prakriti questionnaire alongside structured health history and observational checklists, the study aimed to (1) document the distribution of Prakriti types in the sample, (2) describe the frequency of body region/system wise morbidities, and (3) explore initial associations between Prakriti and observed morbidity patterns. By providing baseline data and identifying

putative constitution related morbidity trends, this work seeks to inform hypothesis generation, sample size estimation, and the design of subsequent integrative studies that may combine clinical, biochemical, or genetic endpoints. Establishing evidence for Prakriti linked morbidity patterns in children could support constitution tailored preventive strategies in paediatric practice and foster integration between traditional Ayurvedic insights and contemporary child health priorities.

MATERIALS AND METHODS

Study design and setting- This pilot cross-sectional observational study was conducted among school-going children aged 6 to 18 years at a school in Varanasi district, Uttar Pradesh, India.

Participants and sample size- A convenience sample of 50 children was enrolled. The sample size was determined based on the feasibility of recruitment within the study period and the availability of eligible participants. Participants were classified into Prakriti (constitutional) types based on a validated Prakriti questionnaire.

Prakriti assessment- Individual Prakriti was assessed using a self-structured Prakriti questionnaire. The questionnaire evaluated constitutional characteristics based on established Ayurvedic principles. Responses were scored according to the predefined criteria of the self-structured questionnaire, and participants were classified into the predominant Prakriti category based on the highest cumulative score.

Morbidity assessment- Morbidity patterns were assessed using a structured, body region/system wise checklist of conditions. Each child was evaluated for the presence or absence of conditions across major body region, including skin, ear, nose, oral, respiratory, gastrointestinal, musculoskeletal, neurocognitive and behavioral conditions. The presence or absence of morbidity was recorded according to the predefined criteria specified in the checklist.

Data collection procedures- Data collection took place on school premises during the study period. Prior informed consent was obtained from parents/guardians and assent from children where applicable. The self structured Prakriti questionnaire was administered and the checklists of body region wise conditions were completed. Data were entered into a secure database and checked for completeness.

Statistical analysis- Comparative analyses were exploratory given the pilot sample size. For the summarization of participant characteristics and symptom distribution, the frequency and percentage of each conditions and body region wise morbidity were tabulated according to Prakriti categories (Vata, Pitta, Kapha).

Ethics- The study protocol was approved by the Institutional Ethics Committee of Banaras Hindu University (registration number- ECR/526/Inst/UP/2014/RR-20). Written informed consent was obtained from parents/guardians and assent from children as appropriate.

OBSERVATIONS AND RESULTS

Table 1: Distribution of Study Participants by Dominant Prakriti According to Demographic, Anthropometric, Nutritional, and Socioeconomic Characteristics (N = 50)

Characteristics	Categories	Vata 12 (24%)	Pitta 7 (14%)	Kapha 31 (62%)	Total 50 (100%)
Gender	Girls	5 (41.7)	4 (57.1)	17 (54.8)	26 (52.0)
	Boys	7 (58.3)	3 (42.9)	14 (45.2)	24 (48.0)
Age group (years)	6–8	5 (41.7)	0 (0.0)	7 (22.6)	12 (24.0)
	9–11	2 (16.7)	2 (28.6)	5 (16.1)	9 (18.0)
	12–14	3 (25.0)	3 (42.9)	8 (25.8)	14 (28.0)
	15–18	2 (16.7)	2 (28.6)	11 (35.5)	15 (30.0)
BMI category	Underweight	7 (58.3)	3 (42.9)	12 (38.7)	22 (44.0)
	Normal weight	5 (41.7)	4 (57.1)	18 (58.1)	27 (54.0)
	Overweight	0 (0.0)	0 (0.0)	1 (3.2)	1 (2.0)
	Obesity	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Stunting / Wasting	Stunting	1 (8.3)	0 (0.0)	1 (3.2)	2 (4.0)
	Wasting	2 (16.7)	0 (0.0)	3 (9.7)	5 (10.0)
PEM grade (IAP)	Grade I (71–80%)	1 (8.3)	0 (0.0)	2 (6.5)	3 (6.0)
	Grade II (61–70%)	1 (8.3)	0 (0.0)	1 (3.2)	2 (4.0)
	Grade III (51–60%)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
	Grade IV ($\leq$ 50%)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Socioeconomic status (Kuppuswamy)	Upper (I)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
	Upper middle (II)	2 (16.7)	1 (14.3)	14 (45.2)	17 (34.0)
	Lower middle (III)	10 (83.3)	5 (71.4)	16 (51.6)	31 (62.0)

	Upper lower (IV)	0 (0.0)	1 (14.3)	1 (3.2)	2 (4.0)
	Lower (V)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

Among the study participants, Kapha Prakriti was the most common (62.0%), followed by Vata (24.0%) and Pitta (14.0%). Girls constituted a slightly higher proportion of the study population (52.0%) than boys (48.0%). Boys were relatively more common among participants with Vata Prakriti (58.3%), whereas girls predominated in both Pitta (57.1%) and Kapha (54.8%) prakriti. The largest proportion of participants belonged to the 15-18 years age group (30.0%), followed by 12-14 years (28.0%), 6-8 years (24.0%), and 9-11 years (18.0%). According to BMI classification, 54.0% of participants had normal weight, 44.0% were underweight, and 2.0% were overweight, while none were obese. Underweight was comparatively more common among participants with Vata Prakriti (58.3%), whereas normal BMI was more frequently observed in Kapha (58.1%) and Pitta (57.1%) prakriti. Assessment of nutritional status revealed stunting in 4.0% and wasting in 10.0% of participants. Stunting was observed only in Vata (8.3%) and Kapha (3.2%) Prakriti groups, while wasting was relatively more common among Vata participants (16.7%). Based on the Indian Academy of Pediatrics (IAP) classification, 6.0% of participants had Grade I protein-energy malnutrition (PEM), and 4.0% had Grade II PEM. No participants were classified as Grade III or Grade IV. According to the Modified Kuppuswamy socioeconomic classification, the majority of participants belonged to the Lower Middle (Class III) socioeconomic group (62.0%), followed by the Upper Middle (Class II) group (34.0%). Only 4.0% belonged to the Upper Lower (Class IV) category, whereas no participants were classified under the Upper (Class I) or Lower (Class V) socioeconomic classes.

Table 2: Distribution of morbidity patterns by body region/system related condition among participants with dominant prakriti (N=50)

Sr. no.	Morbidity Pattern as per Body Region/System	Participants with Dominant Prakriti			Over all Frequency
		V (n=12) %	P (n=7)%	K (n=31)%	Total (n=50) %
1	Hair Conditions	4 33.30%	5 71.40%	15 48.40%	24 48.00%
2	Ear Conditions	4 33.30%	3 42.90%	13 41.90%	20 40.00%
3	Eye Conditions	1 8.30%	4 57.10%	14 45.20%	19 38.00%
4	Skin Conditions	3 25.00%	3 42.90%	12 38.70%	18 36.00%
5	Oral cavity Conditions	4 33.30%	4 57.10%	9 29.00%	17 34.00%
6	Gastrointestinal Conditions	3 25.00%	2 28.60%	10 32.30%	15 30.00%
7	Nail Conditions	1 8.30%	2 28.60%	10 32.30%	13 26.00%
8	Nasal Conditions	2 16.70%	2 28.60%	7 22.60%	11 22.00%
9	Respiratory Conditions	1 8.30%	1 14.30%	9 29.00%	11 22.00%
10	Neurocognitive and Behavioral Conditions	2 16.70%	2 28.60%	4 12.90%	8 16.00%
11	Musculoskeletal Conditions	0 0.00%	2 28.60%	3 9.70%	5 10.00%
	Total	12 24.00%	7 14.00%	31 62.00%	50 100.00%

Kapha Prakriti was the most dominant type, accounting for 62% of participants, followed by Vata (24%) and Pitta (14%). When body regions wise morbidity patterns were analyzed, hair conditions were the most frequent, affecting nearly half of the students, with higher prevalence among Pitta (71.4%) followed by Kapha (48.4%), and Vata (33.3%). Ear conditions were the second most frequent morbidity pattern, present in 40% of the total sample, with higher prevalence among Pitta (42.90%) followed by Kapha (41.60%), and Vata (33.3%). Eye conditions were also third commonly observed, showing a clear predominance in Pitta (57.1%), followed by Kapha (45.20%), and Vata (8.30%). Skin conditions were relatively common, again showing stronger expression in Pitta (42.90%) followed by Kapha (38.70%) and Vata constitutions (25%). Skin conditions were relatively common, again showing stronger expression in Pitta and Kapha constitutions. Oral cavity conditions were distributed across all three constitutions but appeared more often in Pitta (57.1%) followed by Vata (33.3%), and Kapha (29.00%). Gastrointestinal conditions were present in 30% of students, with no major differences between Prakriti groups, like Kapha (32.30%), Pitta (28.60%) and Vata (25%). Nail conditions were noted in about 26% of participants, predominantly in Kapha (32.30%), Pitta (28.60%) and Vata (8.30%). Nasal and respiratory conditions

were noted in about 22% of participants. The nasal conditions were noted in Pitta (28.60%) followed by Kapha (22.60%) and Vata constitutions (16.70%). The respiratory conditions were noted in Kapha (29%) followed by Pitta (14.30%) and Vata (8.30%). Neurocognitive & behavioral conditions and musculoskeletal conditions were less frequent overall but were more noticeable in Pitta individuals. The neurocognitive & behavioral conditions were noted in Pitta (28.60%) followed by Vata constitutions (16.70%) and Kapha (12.90%). The musculoskeletal conditions were noted in Pitta (28.60%) and Kapha (9.70%) only.

Overall, the findings indicate that while Kapha Prakriti was most prevalent, Pitta Prakriti showed proportionally higher morbidity in several systems, especially hair, eyes, and skin, consistent with their doshic characteristics.

Table 3: Distribution of specific morbidity patterns by body region/system among participants with dominant prakriti (N = 50)

Sr. no.	Specific morbidity patterns by body region/system	Participants with Dominant Prakriti			Over all Frequency
		Vata (n=12) %	Pitta (n=7) %	Kapha (n=31) %	Total (n=50) %
1.	Hair Conditions				
1	Early grey	5 (41.67%)	0 (0%)	0 (0%)	5 (10%)
2	Hair loss	8 (66.67%)	5 (71.43%)	3 (9.68%)	16 (32%)
3	Scalp acne/pimples	1 (8.33%)	3 (42.86%)	1 (3.23%)	5 (10%)
4	Thin and sparse hair	6 (50%)	0 (0%)	2 (6.45%)	8 (16%)
5	Easily pluckable/Brittle hair	3 (25%)	1 (14.29%)	0 (0%)	4 (8%)
6	Dandruff in hair	2 (16.67%)	0 (0%)	8 (25.81%)	10 (20%)
7	Frizzy hair	3 (25%)	1 (14.29%)	1 (3.23%)	5 (10%)
8	Greasy hair	0 (0%)	0 (0%)	3 (9.68%)	3 (6%)
9	Dry hair	6 (50%)	0 (0%)	0 (0%)	6 (12%)
2.	Ear Conditions				
1	Ear pain	0 (0%)	1 (14.29%)	4 (12.9%)	5 (10%)
2	Loss of hearing	1 (8.33%)	0 (0%)	0 (0%)	1 (2%)
3	Ear wax	3 (25%)	3 (42.86%)	9 (29.03%)	15 (30%)
4	Itching in ear	0 (0%)	2 (28.57%)	1 (3.23%)	3 (6%)
5	Ear swelling	0 (0%)	0 (0%)	2 (6.45%)	2 (4%)
3.	Eye Conditions				
1	Pale eye	0 (0%)	2 (28.57%)	0 (0%)	2 (4%)
2	Redness in eye	1 (8.33%)	2 (28.57%)	2 (6.45%)	5 (10%)
3	Dry eye	4 (33.33%)	1 (14.29%)	0 (0%)	5 (10%)
4	Pain in eye	0 (0%)	2 (28.57%)	1 (3.23%)	3 (6%)
5	Burning sensation	1 (8.33%)	4 (57.14%)	0 (0%)	5 (10%)
6	Squint	1 (8.33%)	0 (0%)	0 (0%)	1 (2%)
7	Watery eyes	0 (0%)	0 (0%)	9 (29.03%)	9 (18%)
4.	Skin Conditions				
1	Hyperpigmented rashes	0 (0%)	1 (14.29%)	0 (0%)	1 (2%)
2	Hypopigmented rashes	0 (0%)	0 (0%)	1 (3.23%)	1 (2%)
3	Scaling of skin	1 (8.33%)	1 (14.29%)	0 (0%)	2 (4%)
4	Cracking of skin	2 (16.67%)	0 (0%)	0 (0%)	2 (4%)
5	Acne on face	0 (0%)	5 (71.43%)	2 (6.45%)	7 (14%)
6	Itching on skin	2 (16.67%)	1 (14.29%)	0 (0%)	3 (6%)
7	Excessive sweating	1 (8.33%)	5 (71.43%)	2 (6.45%)	8 (16%)
8	Less sweating	2 (16.67%)	0 (0%)	3 (9.68%)	5 (10%)
9	Foul smell in sweat	0 (0%)	3 (42.86%)	1 (3.23%)	4 (8%)
5.	Oral Conditions				
1	Cracked corners of mouth	1 (8.33%)	1 (14.29%)	0 (0%)	2 (4%)
2	Pale tongue	0 (0%)	0 (0%)	1 (3.23%)	1 (2%)
3	Cracked tongue	1 (8.33%)	0 (0%)	0 (0%)	1 (2%)
4	Coated tongue	0 (0%)	1 (14.29%)	2 (6.45%)	3 (6%)
5	Tiny holes in teeth	5 (41.67%)	0 (0%)	1 (3.23%)	6 (12%)
6	Tooth decay	1 (8.33%)	1 (14.29%)	1 (3.23%)	3 (6%)
7	Missing teeth	2 (16.67%)	0 (0%)	0 (0%)	2 (4%)
8	Forward teeth	2 (16.67%)	0 (0%)	1 (3.23%)	3 (6%)
9	Coating on teeth	2 (16.67%)	0 (0%)	3 (9.68%)	5 (10%)
10	Pale teeth	0 (0%)	3 (42.86%)	0 (0%)	3 (6%)

11	Swollen gums	2 (16.67%)	0 (0%)	1 (3.23%)	3 (6%)
12	Bleeding gums	3 (25%)	0 (0%)	0 (0%)	3 (6%)
6.	Gastrointestinal Conditions				
1	Increased appetite	0 (0%)	2 (28.57%)	0 (0%)	2 (4%)
2	Loss of appetite	1 (8.33%)	0 (0%)	0 (0%)	1 (2%)
3	Loose motion	1 (8.33%)	1 (14.29%)	0 (0%)	2 (4%)
4	Constipation	0 (0%)	0 (0%)	1 (3.23%)	1 (2%)
5	Loss of thirst	1 (8.33%)	1 (14.29%)	4 (12.9%)	6 (12%)
6	Excess thirst	0 (0%)	1 (14.29%)	0 (0%)	1 (2%)
7	Pain in abdomen	5 (41.67%)	1 (14.29%)	1 (3.23%)	7 (14%)
8	Worms in stool	1 (8.33%)	0 (0%)	0 (0%)	1 (2%)
7.	Nail Conditions				
1	Pale nail	0 (0%)	0 (0%)	1 (3.23%)	1 (2%)
2	Spoon-shaped nails	2 (16.67%)	1 (14.29%)	0 (0%)	3 (6%)
3	Lines on nail	3 (25%)	0 (0%)	1 (3.23%)	4 (8%)
4	Over rounded nail	0 (0%)	1 (14.29%)	0 (0%)	1 (2%)
5	Rough nail	3 (25%)	0 (0%)	0 (0%)	3 (6%)
6	Brittle nail	1 (8.33%)	1 (14.29%)	0 (0%)	2 (4%)
7	Separated nail from its nail bed	0 (0%)	0 (0%)	1 (3.23%)	1 (2%)
8	Redness around nails	0 (0%)	1 (14.29%)	2 (6.45%)	3 (6%)
9	White spots on nails	6 (50%)	0 (0%)	3 (9.68%)	9 (18%)
8.	Nasal Conditions				
1	Nasal swelling	0 (0%)	0 (0%)	1 (3.23%)	1 (2%)
2	Nasal discharge	0 (0%)	0 (0%)	1 (3.23%)	1 (2%)
3	Dryness in nose	3 (25%)	1 (14.29%)	0 (0%)	4 (8%)
4	Running nose	2 (16.67%)	0 (0%)	6 (19.35%)	8 (16%)
5	Bleeding nose	1 (8.33%)	0 (0%)	1 (3.23%)	2 (4%)
9.	Respiratory Conditions				
1	Difficulty in breathing	0 (0%)	0 (0%)	4 (12.9%)	4 (8%)
2	Coughing	0 (0%)	0 (0%)	10 (32.26%)	10 (20%)
10.	Neurocognitive and Behavioral Conditions				
1	Short-term memory	2 (16.67%)	1 (14.29%)	0 (0%)	3 (6%)
2	Unclear speech	1 (8.33%)	0 (0%)	0 (0%)	1 (2%)
3	Attention Deficit	1 (8.33%)	0 (0%)	0 (0%)	1 (2%)
4	Learning disability	2 (16.67%)	0 (0%)	0 (0%)	2 (4%)
5	Mood swings	3 (25%)	1 (14.29%)	2 (6.45%)	6 (12%)
6	Sleeping problem	3 (25%)	1 (14.29%)	0 (0%)	4 (8%)
11.	Musculoskeletal Conditions				
1	Knock knees	2 (16.67%)	0 (0%)	0 (0%)	2 (4%)
2	Swelling in joints	0 (0%)	1 (14.29%)	0 (0%)	1 (2%)
3	Pain in joints	2 (16.67%)	1 (14.29%)	0 (0%)	3 (6%)

The present table depicts the distribution of various body regions related conditions among students with different Prakriti dominance Vata (n=12), Pitta (n=7), and Kapha (n=31) with an overall sample size of 50. In the hair conditions, the most common conditions observed were hair loss (32%) and dandruff (20%). Among Prakriti types, Vata individuals showed a higher frequency of early greying (41.67%) and dry hair (50%), while Pitta individuals predominantly exhibited hair loss (71.43%) and scalp acne (42.86%). Kapha dominant individuals mainly presented with dandruff (25.81%) and greasy hair (9.68%), indicating that hair problems were primarily associated with Vata and Pitta Prakriti, reflecting dryness and heat as the main pathological tendencies.

In the ear conditions, ear wax accumulation (30%) was the leading complaint, especially among Pitta and Kapha individuals, while Vata had minimal ear conditions. This pattern suggests that Kapha dominance tends to increase Kleda and Srotorodha, leading to ear wax formation. In the eye conditions, watery eyes (18%) and redness (10%) were most common. Pitta individuals experienced more redness (28.57%) and burning (57.14%) due to the predominance of the Tejas element, whereas Kapha showed watery eyes (29.03%) and Vata displayed dryness (33.33%). These findings correlate ocular manifestations with elemental dominance heat in Pitta, dryness in Vata, and moisture in Kapha.

In the skin conditions, acne (14%) and excessive sweating (16%) were frequent. Pitta individuals exhibited the highest number of cases with acne (71.43%) and excessive sweating (71.43%), while Vata presented with cracking and dryness, and Kapha with less sweating (9.68%). This confirms that inflammatory and heat-related conditions are predominantly Pitta associated. For the oral cavity conditions, tiny holes in teeth (12%) and coating on teeth (10%) were the main findings. Vata individuals had structural dental conditions, while Kapha showed more coating, indicating the accumulation of Kapha in the oral cavity.

In the gastrointestinal conditions, pain in the abdomen (14%) and loss of thirst (12%) were most frequent. Vata individuals showed higher incidence of abdominal pain (41.67%), Pitta had excessive thirst (14.29%), and Kapha showed loss of thirst and mild constipation. These variations reflect the distinct digestive patterns of each Dosha, irregularity in Vata, hyperacidity in Pitta, and sluggishness in Kapha. In the nails conditions, white spots (18%) and lines (8%) were common, predominantly among Vata Prakriti individuals, indicating Vata imbalance linked to dryness and tissue depletion. For the nasal conditions, running nose (16%) and dryness (8%) were the main conditions. Kapha dominant students reported running nose (19.35%), whereas Vata showed nasal dryness (25%), directly mirroring their elemental properties. In the respiratory conditions, coughing (20%) was most prevalent, particularly in Kapha individuals (32.26%), suggesting respiratory congestion due to mucus accumulation.

In the neurocognitive and behavioral conditions, mood swings (12%) and sleeping problems (8%) were common. Vata dominant individuals exhibited the highest frequencies of both symptoms, signifying instability of the nervous system characteristic of Vata predominance. Among the musculoskeletal conditions, joint pain (6%) and knock knees (4%) were the reported conditions, occurring more frequently in Vata dominant individuals. This finding is in accordance with the Ayurvedic principle that Vata is primarily responsible for movement and musculoskeletal functions.

Overall, the study revealed that hair, skin, and oral conditions were most affected among students. Vata Prakriti individuals were more prone to dryness, brittleness, pain, and neurocognitive irregularities, while Pitta Prakriti showed tendencies toward heat, redness, inflammation, and sweating. Kapha Prakriti individuals exhibited conditions related to heaviness, coating, mucus formation, and congestion. The overall morbidity pattern strongly supports the classical Ayurvedic principle that each Dosha governs specific physiological and pathological tendencies Vata being dry and erratic, Pitta being hot and inflammatory, and Kapha being moist and obstructive reflecting their dominant characteristics in the observed population.

Discussion- The present pilot study explored the distribution of morbidity patterns across different Prakriti types among school-going children aged 6–18 years. Kapha was the predominant Prakriti (62%), followed by Vata (24%) and Pitta (14%). The demographic and nutritional findings indicate that more than half of the participants had a normal BMI 54%, while 44% were underweight. Underweight and wasting were proportionally more frequent among Vata predominant participants than among Pitta and Kapha predominant participants. Similarly, stunting was observed in both Vata and Kapha groups. These observations may be clinically relevant because nutritional status in childhood is influenced by multiple factors, including dietary intake, socioeconomic conditions, growth stage, and environmental circumstances. In the present study, most participants belonged to the lower-middle socioeconomic category, which further emphasizes the importance of considering socioeconomic context when interpreting morbidity patterns.

Across body systems, hair conditions were the most frequently observed morbidity pattern, affecting 48% of the study population, followed by ear conditions (40%), eye conditions (38%), skin conditions (36%), and oral conditions (34%). Hair loss was the most frequently reported hair-related finding (32%), followed by dandruff (20%). Hair loss was proportionally more frequent among Pitta (71.43%) and Vata (66.67%) participants, whereas dandruff was more frequently observed among Kapha participants (25.81%). Vata participants also showed higher frequencies of dry hair, thin or sparse hair, and early greying, while scalp acne was more frequent among Pitta participants and greasy hair among Kapha participants.

These findings show a pattern that can be interpreted in relation to classical Ayurvedic descriptions of Prakriti. The predominance of dryness-related hair features among Vata participants is broadly compatible with the classical attributes of Vata, particularly Ruksha (roughness) and Vishada (non-sliminess). Similarly, the higher frequency of scalp acne and hair loss among Pitta participants may be considered in relation to the classical attributes of Pitta, including Ushna (hot) and Tikshna (sharp). The occurrence of dandruff and greasy hair among Kapha participants may correspond with its Snigdha (unctuous) characteristics.

Ocular findings demonstrated a particularly noticeable pattern among Pitta participants. Burning sensation was reported by 57.14% of Pitta participants, while redness and eye pain were each observed in 28.57%. In contrast, dry eyes were more frequent among Vata participants (33.33%), whereas watery eyes were observed in 29.03% of Kapha participants. These findings broadly correspond with the classical descriptions of Pitta, Vata, and Kapha in terms of heat, dryness, and moisture, respectively.

Skin morbidity showed a similar pattern. Acne and excessive sweating were the most frequent findings overall, occurring in 14% and 16% of participants, respectively. Both acne and excessive sweating were substantially more frequent among Pitta participants, each affecting 71.43% of this group. Vata participants more commonly exhibited cracking and itching of the skin, whereas Kapha participants showed comparatively greater representation of reduced sweating. The higher frequency of heat and sweating related manifestations in Pitta participants is consistent with the classical description of Pitta as predominantly Ushna (hot). Similarly, the occurrence of skin cracking among Vata participants is compatible with the Ruksha quality of Vata.

Oral findings were present in 34% of participants, with tiny holes in teeth and coating on teeth being the most frequently observed findings. Tiny holes in teeth were more frequent among Vata participants (41.67%), whereas pale teeth were observed more frequently among Pitta participants (42.86%) and coating on teeth was relatively more common among Kapha participants (9.68%). Although these patterns may be interpreted within an Ayurvedic constitutional framework, oral health is strongly influenced by diet, dental hygiene, fluoride exposure, socioeconomic conditions, and access to dental care.

Gastrointestinal manifestations were reported in 30% of participants. Abdominal pain was the most frequent gastrointestinal complaint (14%) and was particularly common among Vata participants (41.67%). Pitta participants showed relatively higher frequencies of increased appetite and thirst-related complaints, whereas loss of thirst was more

frequently observed in the Kapha group. The higher frequency of abdominal pain among Vata participants is broadly compatible with the classical association of Vata with variability and functional disturbance of movement. Nail, nasal, and respiratory findings also demonstrated constitution-specific patterns. White spots on the nails were observed in 18% of participants and were more frequent among Vata participants (50%), while running nose was more common among Kapha participants (19.35%) and nasal dryness among Vata participants (25%). Respiratory morbidity was predominantly represented by coughing, which occurred in 20% of the total sample and was reported in 32.26% of Kapha participants. The greater frequency of nasal discharge and coughing among Kapha participants may be considered compatible with the classical attributes of Kapha, particularly its Snigdha and Sandra characteristics. Neurocognitive, behavioral, and musculoskeletal findings were less frequent overall but showed notable patterns. Mood swings and sleeping problems were more frequently reported among Vata participants, while musculoskeletal complaints were observed mainly among Vata and Pitta participants. Vata participants showed mood swings and sleeping problems in 25% of cases, and joint pain and knock knees were reported in 16.67% each. These observations may be considered in relation to the classical description of Vata as mobile and variable.

When the findings are considered collectively, Pitta participants demonstrated comparatively higher proportions of morbidity in several systems, particularly hair, eye, skin, and oral conditions, despite representing only 14% of the study population. Vata participants showed a pattern characterized more by dryness-related manifestations, abdominal pain, behavioral and sleep-related complaints, and musculoskeletal findings. Kapha participants, who constituted the largest proportion of the sample, showed relatively greater representation of respiratory and nasal manifestations, watery eyes, dandruff, greasy hair, and certain coating-related findings. These patterns are broadly concordant with classical Ayurvedic descriptions of the three Doshas.

The association between Prakriti and disease susceptibility has been extensively explored in several studies integrating Ayurvedic principles with modern biomedical insights. Studies across India have highlighted the patterns of morbidity in rural populations, indicating high prevalence of common ailments like respiratory infections, gastrointestinal disorders, and nutritional deficiencies. Gopalakrishnan et al. (2015) reported widespread morbidity in rural Tamil Nadu, while Bashar et al. (2017), Kaushik et al. (2014), and Devi & Srigriri (2015) confirmed similar trends among children and adolescents in various regions. Kurrey et al. (2017) studied a primitive tribal group and noted unique morbidity profiles due to lifestyle and environmental factors. These findings underscore the importance of localized health assessments for targeted interventions.^{5,6,7,8,9}

School-based studies demonstrate that morbidity patterns differ significantly by age, gender, and location. Sachan et al. (2017) and Anga & Panabaka (2021) documented a high prevalence of nutritional and respiratory conditions in school-going children, while Rani et al. (2014), Tiwari et al. (2013), and Shinde et al. (2015) observed region-specific variations in illness frequency. Such studies emphasize the role of school health programs in monitoring and addressing childhood morbidity.^{10,11,12,13,14}

Visual health is a critical aspect of overall child well-being. Studies by Singh VV (2017), Naik & Shah (2013), and Agrawal et al. (2020) reported significant rates of refractive errors and other ocular problems among school children, highlighting the need for regular eye screenings in schools. Understanding morbidity in context requires clarity on epidemiological concepts. Morbidity refers to the incidence or prevalence of disease, whereas mortality indicates death rates. Healthline (2024), Cambridge Dictionary (2024), Hernandez & Kim (2022), and other sources provide standard definitions to frame these studies appropriately.^{15,16,17,18,19,20}

The study also contributes to the limited literature examining Prakriti in relation to morbidity among school-going children. Previous research has examined Prakriti in relation to cardiovascular risk factors, metabolic characteristics, genetic markers, and other physiological outcomes, while epidemiological studies among children have independently documented substantial burdens of respiratory, nutritional, gastrointestinal, ocular, and other morbidities. The present study brings these two areas together by examining morbidity patterns across constitutional categories in a school-based population.

A major strength of this study is its school-based assessment of morbidity across multiple body systems within an Ayurvedic constitutional framework. The study also provides preliminary data from an age group in which nutritional, developmental, behavioral, and environmental influences interact. The findings may assist in developing hypotheses for larger studies and may support the design of constitution-sensitive school health screening approaches. The findings are better viewed as preliminary observations that can be used to generate hypotheses for subsequent research.

Overall, the present findings provide preliminary evidence of variation in morbidity patterns across Prakriti types and demonstrate the feasibility of examining constitutional characteristics alongside childhood morbidity in a school-based setting. The observed patterns are broadly consistent with classical Ayurvedic descriptions, particularly the predominance of dryness-related manifestations in Vata, heat-related manifestations in Pitta, and moisture- and congestion-related manifestations in Kapha. These observations should be considered hypothesis-generating rather than confirmatory. Larger, multicentre studies with standardized Prakriti assessment, clearly defined clinical outcomes, adequate representation of all Prakriti groups, and adjustment for relevant demographic, nutritional, socioeconomic, and environmental factors are needed to determine whether the observed associations are reproducible and clinically meaningful.

CONCLUSION

This pilot cross-sectional observational study suggests that Prakriti may be associated with distinct morbidity patterns among school-going children. Kapha was the predominant Prakriti, followed by Vata and Pitta, with hair, skin, and oral

morbidities commonly observed. Pitta predominant children showed relatively higher frequencies of hair loss, scalp acne, and excessive sweating, whereas Vata predominant children showed greater manifestations of dryness, brittleness, early greying, mood-related variations, and musculoskeletal complaints. Kapha predominant children showed relatively more respiratory and nasal complaints, along with greasy hair and dandruff. Although these patterns were consistent with classical Ayurvedic descriptions, statistical significance was limited, likely owing to the small sample size. These preliminary findings need to be confirmed through larger and longer term studies to better understand the relationship between Prakriti and childhood morbidity.

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