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Research Article

ASSOCIATION OF *MEDHA* AND *RAKTA SARA* AS PER DIFFERENT *DEHA PRAKRITI* WITH SPECIAL REFERENCE TO IQ – A CROSS-SECTIONAL ANALYTICAL STUDY

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ABSTRACT

Medha is one of the qualities attributed to *Rakta Dhatu Sara Purusha,* and this study focuses on IQ levels in *Rakta Sara individuals* in relation to their *Deha Prakriti*. According to Ayurveda, *Rakta Sara Purusha* has *Uddhatam Medham* (higher intelligence) but there is no such scientific studies are available that in which *Deha Prakriti* of *Rakta Sara* individuals has more and less intelligence. **Aim:** To find the association of *Medha* and *Rakta Sara* as per different *Deha Prakriti*. **Methods:** The present study is a cross-sectional analytical study. Simple random sampling of 450 healthy individuals of age group 20-59 were screened for assessing the percentage of *Dhatu Sara (Rakta Dhatu)*. IQ test has conducted in the institution, by using Revised Bhatia's Short Battery Performance Test of Intelligence for Adults Scale. Then immediately after the IQ test, *Deha Prakriti* has been conducted by using a validated SAQDP proforma. The tests / methods used in the analysis of the study data are Chi-square Test, ANOVA Test & Regression analysis method. **Results:** The present study included a total of 100 participants after selecting the *Pravara Rakta Sara* (above 60%) screening analysis by using C-DAC Software questionnaire of *Dhatu Sara*. Out of the total sample, 79 individuals (79.0%) were classified as having IQ above average, while 21 participants (21.0%) did not fall into this category. The association between *Prakriti* and *Rakta Sara* showed a statistically significant relationship ($\chi^2 = 43.8$, $p = 0.021$), indicating that variations in *Rakta Sara* were significantly influenced by different constitutional types. Among the *Prakriti* types, *Vata Prakriti* emerged as a statistically significant predictor, with a negative association (B = -21.16, p = 0.008) and a moderate effect size (0.08). **Conclusion:** The study provides quantitative empirical support for the classical Ayurvedic concept of *Uddhatam Medha* in *Rakta Sara Purusha*, with 79% of participants showing above-average IQ scores. Regression analysis revealed that pure *Vata Prakriti* is a statistically significant negative predictor of IQ score, suggesting that an unbalanced predominance of *Vata* may interfere with performance on standardized intelligence tests.

INTRODUCTION

Ayurveda a timeless wisdom of Indian subcontinent that guides us towards the balance, helping us find wellness not only in medicine but also in the way we live each day. It is the life science of human body based on the repeated studies and keen observations of intellectual persons from ancient Bharat. Ayurveda is the life science that describes the advantageous, disadvantageous, happy and unhappy states of life, in addition to what is good and bad for life and its measurement. It deals with not only longevity, but also with maintaining healthy body and mind. Our World Health Organization (WHO) a specialized agency of United Nations Organization (UNO) also states the definition of Health as "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity".[1]

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In Ayurveda, *Medha* is understood as a wide, holistic idea of intelligence. It goes beyond simple memory and includes a person's mental energy, thinking ability, judgment, wisdom, and the overall quality of being an intelligent, thoughtful individual. In Monier-Williams Sanskrit-English Dictionary the word "*Medha"* has been described as mental vigour or power, understanding, intelligence, intellect, prudence, wisdom; retentiveness, memory.[2] In Ayurveda, the evaluation of *Medha* is carried out using three classical methods of *(Aaptopadesha, Pratyaksha,* and *Anumana)* examination.[3]

Sara meanings of word are essential, most excellent, best real, genuine, true and strong. *Sarata* is described by Chakrapani as *Vishuddhatara Dhatu* (highest level of tissue excellence).[4] *Sara* is designated as the purest form of *Dhatu* in its natural state.[5] The concept of *Sara* is related with the excellence of *Dhatu.*

According to *Charaka Vimana Sthana*, a person with *Rakta Sara* is described as having a natural redness and lustre in the external ears, eyes, face, lips, tongue, palms, soles, nails, forehead and genital organs. They are described as having higher intelligence, a delicate constitution, and only moderate physical strength.[6] They do not tolerate heavy physical work or exposure to excessive heat.

कर्णाक्षिमुखजिह्वानासौष्ठपाणिपादतलनखललाटमेहनं स्निग्धरक्तवर्णं श्रीमद्भाजिष्णु रक्तसाराणाम् ।

सा सारता सुखम् उद्धतां मेधां मनस्वित्वं

सौकुमार्यमनतिबलमक्लेशसहिष्णुत्वमुष्णासहिष्णुत्वंचाचष्टे ।।च.स.वि 8/ 104

Prakriti represents the inherent, physiological constitution of an individual, determined by the relative predominance of the *Doshas (Vata, Pitta,* and *Kapha). Prakriti* is established at the time of conception through the union of *Shukra* and *Shonita*. *Prakriti* of an individual depends on the predominance of a particular *Dosha* in *Shukra* and *Shonita* at the time of conception. Hence cognitive abilities also vary among individuals.[7] People with *Vata Prakriti* generally have good grasping ability and short-term memory but may have difficulty in retaining knowledge for a long period.[8] Those with *Pitta Prakriti* is typically described as intelligent *(Medhavi)* and sharp- minded *(Nipunamati*).[9] *Kapha Prakriti* individuals generally possess good long-term memory and have a better ability to retain knowledge over time. Therefore, they are wise *(Buddhiman)*, have a good memory *(Smritiman),*[10] and show strong determination *(Dhritiman)*.[11]

An Intelligence Quotient (IQ) is a numerical score obtained from standardized tests or subtests that are designed to measure an individual's intelligence.[12] In the Indian context, an important contribution was made by Indian psychologist Chandra Mohan Bhatia, who developed Bhatia's Battery of Performance Tests of Intelligence in the 1950s.[13] However, IQ scores can be affected by many factors, such as education, language, cultural background, nutrition, health, sleep, motivation, emotional state, socioeconomic status, and familiarity with the testing process.[14]

Medha is one of the qualities attributed to *Rakta Dhatu Sara Purusha*, and this study focuses on IQ levels in *Rakta Sara* individuals in relation to their *Deha Prakriti*. The present study– "Association of *Medha* and *Rakta Sara* as per different *Deha Prakriti* with special reference to IQ" mainly focuses on finding the relationship between *Medha* (IQ) and predominant *Rakta Dhatu Sara Purusha*, *Medha* (IQ) and various *Deha Prakritis*, also this simultaneously finds the relationship between *Rakta Sara Purusha* and their *Deha Prakriti.*

AIM AND OBJECTIVES

Aim: To study the association of *Medha* and *Rakta Sara* in different *Deha Prakriti.*

Primary objectives: To assess the *Rakta Sara Purusha* (of 60% and above); To evaluate *Medha* (IQ) of *Rakta Sara Purusha* (of 60% and above); To assess the Deha *Prakriti* among IQ assessed individuals.

Secondary objectives: To assess the association between *Rakta Saara* and *Medha* (IQ); To assess the association between *Rakta Sara* and *Deha Prakriti*; To assess the association between *Deha Prakriti* and Medha (IQ).

MATERIALS AND METHODS

Study Design and Setting

The present study is a cross-sectional analytical study. The aim of this study was to explore the association between *Medha* (IQ) with *Rakta Dhatu Sara Purusha* and different *Deha Prakriti* individuals of healthy volunteers. The study was designed to assess the variations in *Medha* (IQ score) in *Pravara Rakta Sara* and their *Deha Prakriti* considering both subjective and objective measures. This research study follows A Cross-Sectional Analytical design, which allows simultaneous assessment of *Rakta Sara* Percentage, *Medha* (IQ) and *Deha Prakriti* in each participant.

The study was conducted at Ch. Brahm Prakash Ayurved Charak Sansthan (CBPACS), Khera Dabar, New Delhi, affiliated with Guru Gobind Singh Indraprastha University- Delhi. Participants were apparently healthy volunteers from the institute and its adjoining local areas.

Ethical Approval and Registration

Approval from Ethics Committee was sanctioned on 13th September 2024 with I.E.C Code:

CBP-IEC/2024/KS/MD/03. The study was registered under CTRI with number CTRI/2025/03/083002.

Sample size and sampling technique

Simple random sampling of 450 healthy individuals of age group 20-59 were selected for screening the percentage of *Dhatu Sara (Rakta Dhatu)*. After that those who have get 60% and above of *Rakta Dhatu Sara* features were taken for further assessment of Intelligence Quotient (IQ) and *Prakriti*. Hence, a sample size of 100 participants registration was recommended by the Institutional Research Committee (IRC).

Selection criteria

Inclusion criteria: Participants included in the study are self-reported individuals who appear to be in good health and reside in New Delhi, aged between 20 to 59 years. The participants who have no recorded history of any observable illness in the past month. The participants have not undergone any medical treatments or therapies within the last month. Individuals have *Rakta Sarata* more than 60%.

Exclusion criteria: Individuals with any systemic or mental disorders are excluded from the study. Pregnant and breast-feeding women are not eligible to participate. Individuals who are currently taking medication, sedatives, or undergoing treatment for any other illness are also excluded from the study.

Study procedure

In this overall study, 450 apparently healthy volunteers were selected for the purpose of this analytical study. The Healthy Lifestyle Index, followed by taking Informed Consent Form was used to record all the data of an individual included in study. Ayusoft C-DAC has used to record the percentage of Rakta Sara individuals. Among them, 100 individuals were selected who have *Rakta Sara* percentage of above 60%. Then the volunteers were requested for IQ Test. IQ test has conducted in the CBPACS, New Delhi, by using Revised Bhatia's Short Battery Performance Test of Intelligence for Adults Scale which assess visuo-spatial ability, analytical reasoning, problem solving, eye-hand coordination., non-verbal reasoning, practical intelligence, planning and organization, executive function, time and speed management skills. Then immediately after the IQ test, *Deha Prakriti* has been conducted by using a validated SAQDP proforma. Then all the observations were recorded collectively in the table form (Master chart). Then all this data was furnished for statistical analysis.

Assessment of *Dhatu (Rakta) Sara* percentage using C-DAC AyuSoft

C-DAC (Centre for Development of Advanced Computing), India's premier organization under the Ministry of Electronics and Information Technology (MeitY) in the field of advanced computing, has developed AyuSoft, an innovative software platform that integrates the principles of Ayurveda with modern information technology. The classical Ayurveda texts do not provide a standardized method for the assessment or quantification of *Sarata* in an individual. To address this limitation, the developers of AyuSoft have introduced a graphical assessment approach using bar charts for each *Dhatu,* enabling visualization of the relative expression of *Sara* and *Asara* qualities and thereby facilitating a more objective interpretation of *Sarata.*[15]

The percentage of *Rakta Sara* was calculated by subtracting the number of *Asara* features from the number of *Sara* features obtained by the participant. The resultant value was then divided by the total number of respective *Sara* assessment items and multiplied by 100 to express the score as a percentage.

$$Rakta\ Saara\ \% = \frac{\text{Obtained No. of } Rakta\ Sara - \text{Obtained No. } Rakta\ Asara}{\text{Total Number of } Rakta\ Saara}\ x\ 100$$

(Note: Total number of *Rakta Saara* features for-male=34 and for female=33). E.g.: Obtained Number of *Rakta Saara* = 21; Obtained number of *Rakta Asaara* = 04; *Rakta Sara*%= (21−04)/34×100; Hence *Rakta Sara*% = 50 %

Assessment of *Deha Prakriti* using SAQDP

A Validated Self-Assessment Questionnaire for Determining the *Deha Prakriti* (SAQDP)[16] was used to assess the *Deha Prakriti. Deha Prakriti* is a genetically determined constitutional type that classifies individuals into seven categories based on their physical, physiological, and psychological characteristics.[17] The scale demonstrated satisfactory psychometric properties, with an overall Cronbach's alpha of 0.835, indicating very good internal consistency, While the individual *Vata, Pitta,* and *Kapha* constructs also showed good to very good reliability of 0.822, 0.785, and 0.798, respectively. These findings established the questionnaire as a reliable and valid instrument for Prakriti assessment.[18]

The investigator will give the SAQDP proforma to the subject and requested to fill the Visual Analogue Score (VAS) column in numbers from 0 to 10 for each individual *Vata-Pitta-Kapha*'s questions, where 0 represents strong disagreement of the statement and 10 represents strong agreement. In this questionnaire *Vata Dosha* has 22 variable questions based on their respective quality *(Guna),* where *Pitta* and *Kapha Dosha* having 20 questions each.

$$\text{Final \% score of a } Dosha = \frac{Total\ score\ scored\ by\ an\ individual\ for\ a\ Dosha}{220}\ x\ 100$$

The percentage scores of the three *Doshas (Vata, Pitta,* and *Kapha)* were calculated for each participant. Based on these scores, the *Doshas* were ranked as primary (highest percentage), secondary (second highest percentage), and tertiary (lowest percentage). The following criteria were adopted for the determination of *Prakriti*: The *Dosha* with the highest percentage score was designated as the primary *Dosha.* If the percentage values of both the secondary and Tertiary *Doshas* were less than 75% of the primary *Dosha*, the individual was classified as having *Ekadoshaja Prakriti*, corresponding to the dominant primary *Dosha.* If the percentage value of the secondary *Dosha* was equal to or greater than 75% of the primary *Dosha*, while the tertiary *Dosha* remained less than 75% of the primary *Dosha*, the individual was classified as having *Dvandvaja Prakriti*, comprising the primary and secondary *Doshas*. If the percentage values of both the secondary and tertiary *Doshas* were equal to or greater than 75% of the primary *Dosha*, all three *Doshas* were considered in determining the constitutional type, and the individual was classified as having *Tridoshaja Prakriti*.[19]

Assessment of IQ using the Revised Bhatia's Short Battery of Performance Tests of Intelligence for Adults

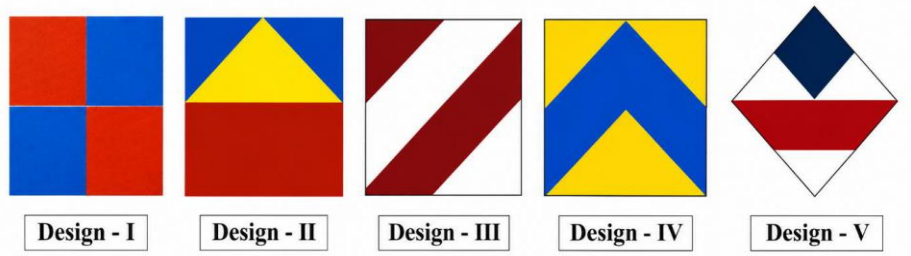
The Bhatia's Battery of Performance Tests of Intelligence is one of the most widely used performance intelligence tests in India due to its ease of administration, scoring, and interpretation. To reduce the testing time, Murthy (1966) advocated the use of Koh's Block Design and Pass-A-Long tests as a short battery, which was found to be as sensitive as that of the full battery.[20]

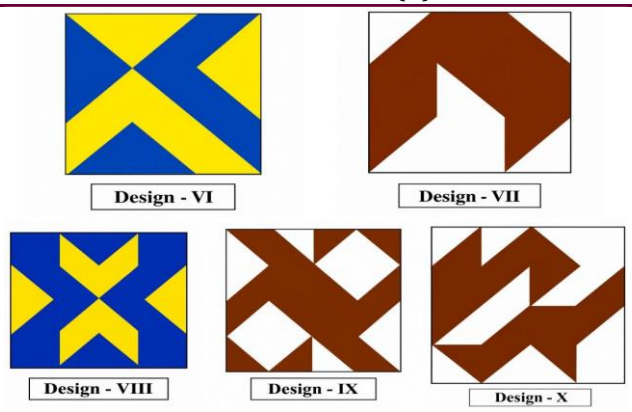


Figure/Illustration 01: The Revised Bhatia's Short Battery of Performance Test of Intelligence for Adults Kit

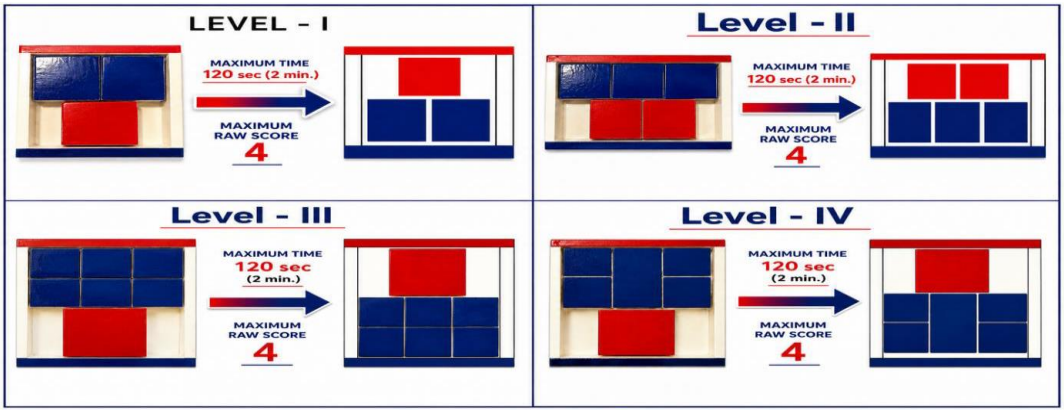
1. For Kohs' Block Design Test (set of 10 cards), stop the test when failure has been recorded twice in succession. The time limit for Desing Nos. 1-5 is 2 minutes each and for Designs Nos. 6-10 is 3 minutes each.[21]
2. For Pass-A-Long Test (set of 8 cards), stop the test when failure has been recorded twice in succession. The time limit for Designs 1 to 4 is 2 minutes each and for Designs 5-8 is 3 minutes each.[22] For every 30 sec subject lost 1 score. Maximum Possible Score is 50 for Kohs' Block Design and 40 for Pass-A-Long Test.[23]

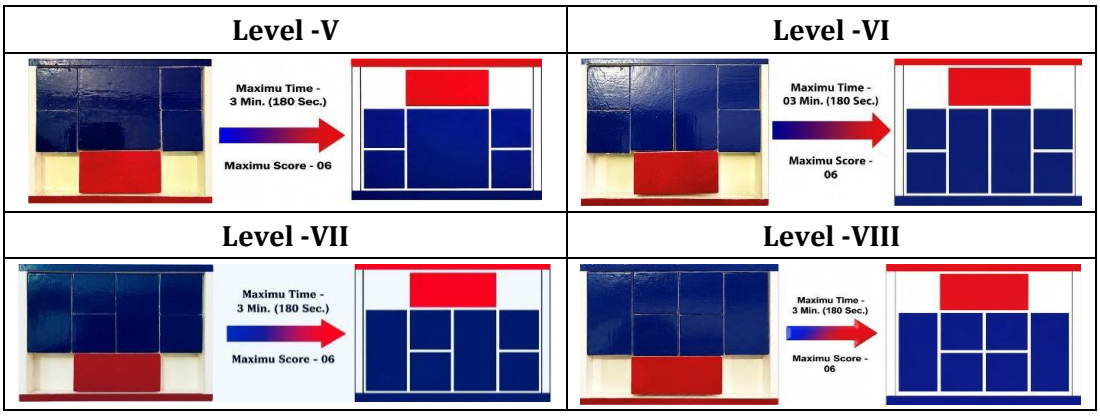
T.Q. can be perceived as similar to I.Q. for the difference, that T.Q. (Test Quotient) is a I.Q. determined on the basis of performance on single subtest and I.Q. is a arithmetical mean of all such T.Q. s.[24] Based on obtained I.Q. a subject can be classified as shown in Table 1.[25] Since all study participants are in the age group of 20 to 40 and having education 10th above only respective tables containing Test Quotient values as per Raw Score and Gender were used.[26,27]





Illustration/Figure 2: 10 Cards for Kohs's Block Design Test





Illustration/ Figure 3: 8 Design (level) cards for Pass-A-Long test

Table 1: Classification of individuals on the basis of I.Q

IQ	Classification
130 and above	Very superior
120 – 129	Superior
110 – 119	High average
90 – 109	Average
80 – 89	Low average
70 – 79	Borderline
50 – 69	Mild mental retardation
35 – 49	Moderate mild mental retardation
20 – 34	Severe mental retardation
Under 20	Profound mental retardation

Statistical Analysis

Demographic variables were summarized using frequencies and percentages and represented in the form of appropriate tables and graphs. Data on continuous variables were expressed as mean±standard deviation (SD). The association between *Medha* (IQ) and *Rakta Sara*, *Medha* and different *Deha Prakriti* was analysed using the Chi-square test, and ANOVA test and the combined association of *Medha* (IQ), *Rakta Sara* and *Deha Prakriti* was analysed by using Regression analysis method. A p-value < 0.05 was considered statistically significant, while a value > 0.05 was taken as statistically non-significant. All statistical analyses were carried out using the Statistical Package for the Social Sciences (SPSS), version 29.0.

OBSERVATIONS AND RESULTS

The present study included a total of 100 participants after selecting the *Pravara Rakta Sara* (above 60%) screening analysis by using C-DAC Software questionnaire of *Dhatu Sara.*

Demographic profile

Out of the total participants, 57 (57.0%) were females, while 43 (43.0%) were males. Most subjects belonged to the 20–29 years age group, comprising 88 cases (88.0%). This was followed by the 30–39 years group with 12 cases (12.0%).

The distribution of participants according to educational qualification showed that the majority were graduates, accounting for 76 cases (76.0%). This was followed by undergraduate participants in 16 cases (16.0%). Overall, the study population was predominantly from the middle and upper middle socio-economic strata.

Table 2: Distribution of subjects according to *Rakta Sara, Prakriti* and IQ classification (N=100)

Variable	Category	No.	%
Rakta Sara	60-70%	36	36.0%
	70-80%	36	36.0%
	80-90%	22	22.0%
	90-100%	6	6.0%
Prakriti	*Vataja*	6	6.0%
	Pittaja	19	19.0%
	Kaphaja	14	14.0%
	Vata-Pittaja	18	18.0%
	Vata-Kaphaja	9	9.0%
	Pitta-Kaphaja	21	21.0%
	Tridoshaja/Sama	13	13.0%
IQ classification	Very superior	13	13.0%
	Superior	34	34.0%
	High average	33	33.0%
	Average	14	14.0%
	Low average	6	6.0%

Association of *Rakta Sara* with IQ

Pearson's chi-square test was applied to check the association between *Rakta Sara* and IQ classification. Overall, although higher *Rakta Sara* categories appeared to have a greater proportion of individuals in higher IQ classifications, the association was not statistically significant (Chi-square=17.99, p=0.116).

Overall, a higher proportion of participants across all *Rakta Sara* categories exhibited above-average IQ. However, the association was not statistically significant (Chi-square=1.41, p=0.703), indicating that there is no significant relationship between *Rakta Sara* and IQ above average status in the study population.

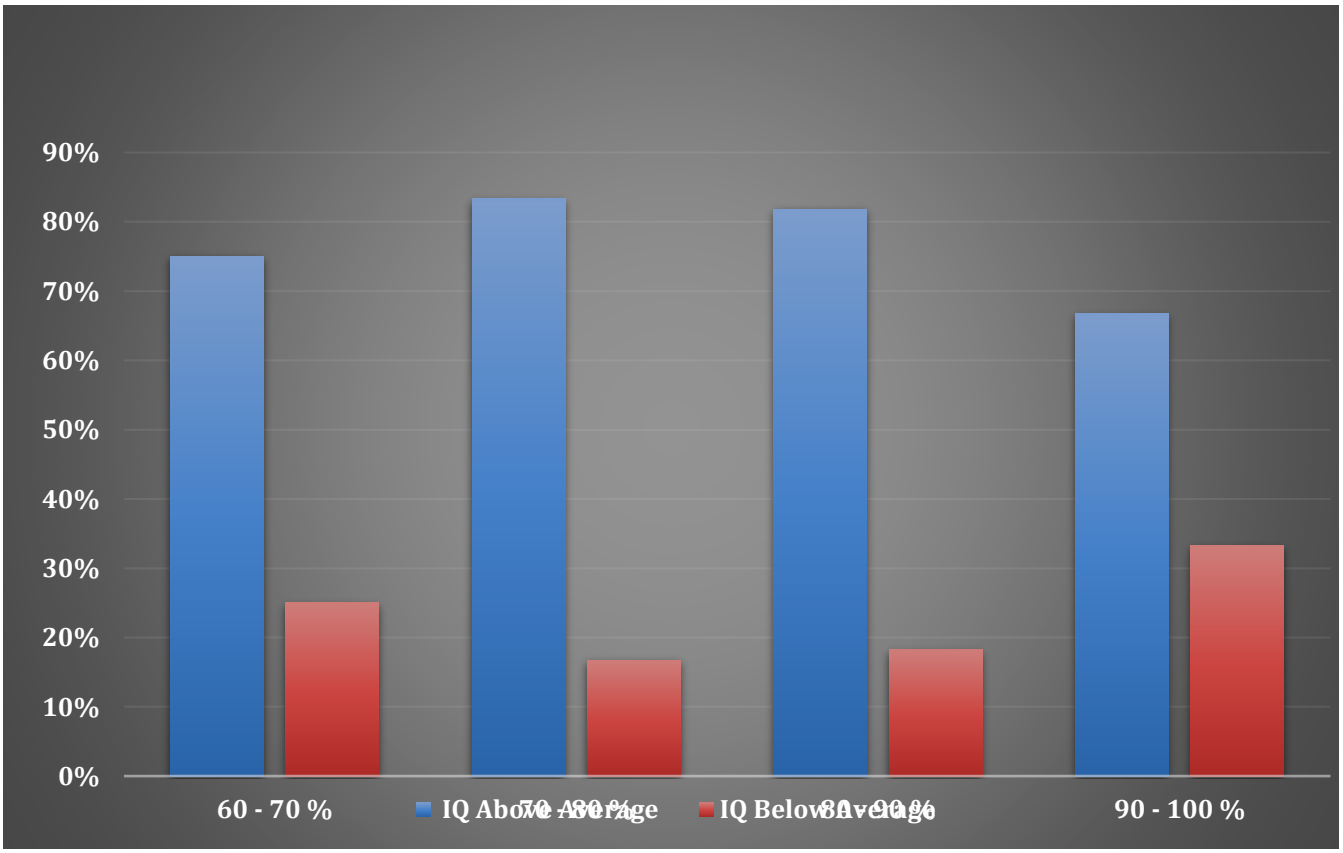
Association of *Prakriti* with IQ

The association between *Prakriti* and IQ classification showed a varied distribution across different constitutional types; however, the relationship was not statistically significant (χ^2 = 39.03, p = 0.335).

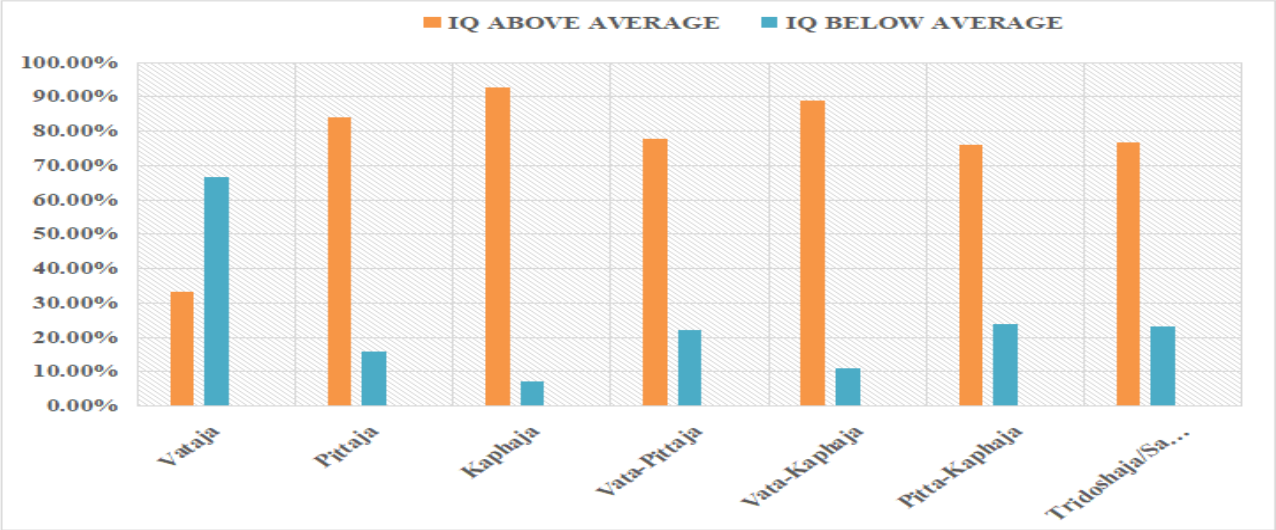
The highest proportions were observed in *Kaphaja* and *Vata-Kaphaja Prakriti*, where participants 92.9% and 88.8% have above-average IQ, followed by *Pittaja* with 84.2%, *Vata-Pittaja* with 77.8%. In contrast, *Vata Prakriti* had a comparatively lower proportion of participants with above-average IQ (33.3%), with the majority (66.7%) falling below this level.

Table 3: Association of IQ category (above average) with *Rakta Sara* and *Prakriti*

Variable	Category	IQ above average: No. (%)	IQ below average: No. (%)	Chi-square	p-value
Rakta Sara	60-70 %	27 (75.0%)	9 (25.0%)	1.41	0.703
	70-80 %	30 (83.3%)	6 (16.7%)		
	80-90 %	18 (81.8%)	4 (18.2%)		
	90-100 %	4 (66.7%)	2 (33.3%)		
Prakriti	*Vataja*	2 (33.3%)	4 (66.7%)	11.27	0.258
	Pittaja	16 (84.2%)	3 (15.8%)		
	Kaphaja	13 (92.9%)	1 (7.1%)		
	Vata-Pittaja	14 (77.8%)	4 (22.2%)		
	Vata-Kaphaja	8 (88.8%)	1 (11.1%)		
	Pitta-Kaphaja	16 (76.2%)	5 (23.8%)		
	Tridoshaja/Sama	10 (76.9%)	3 (23.1%)		



Graph 1: Association of IQ Category with *Rakta Sara*



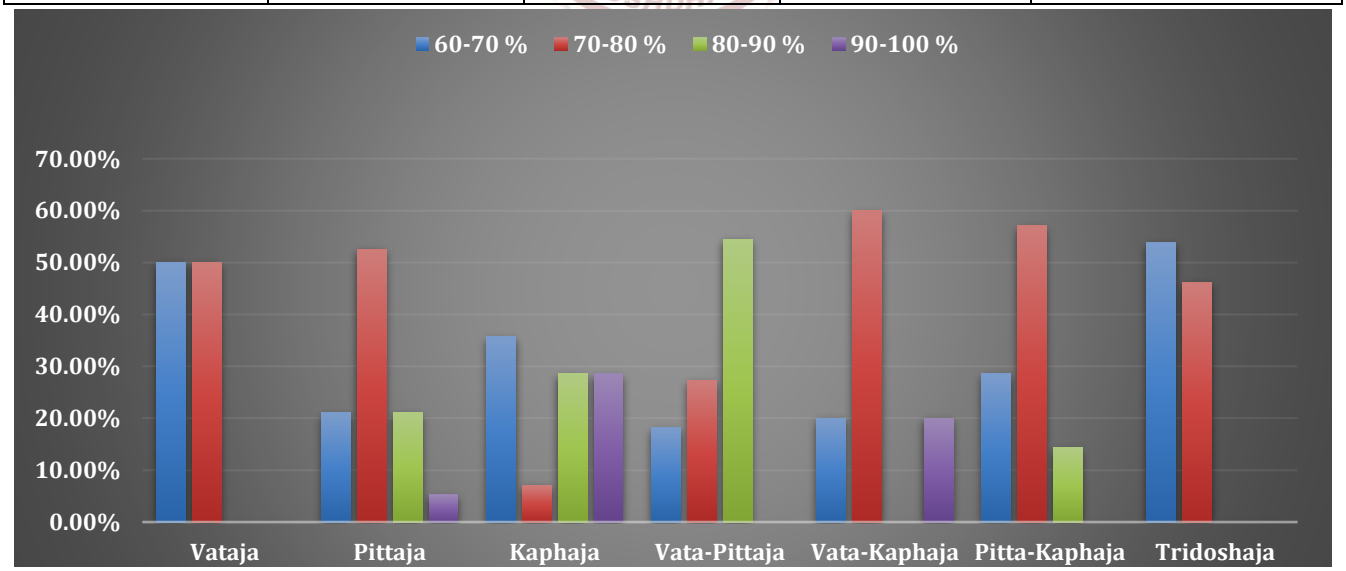
Graph 2: Association of IQ Category with *Prakriti*

Association of *Rakta Sara* with *Prakriti*

The association between *Prakriti* and *Rakta Sara* showed a statistically significant relationship (χ^2=43.8, p=0.021), indicating that variations in *Rakta Sara* were significantly influenced by different constitutional types.

Table 4: Association of *Rakta Sara* with *Prakriti* (Chi-Square=43.8, p=0.021)

Prakriti	**60-70% No. (%)**	**70-80% No. (%)**	**80-90% No. (%)**	**90-100% No. (%)**
Vataja	3 (50.0%)	3 (50.0%)	0 (0.0%)	0 (0.0%)
Pittaja	4 (21.1%)	10 (52.6%)	4 (21.1%)	1 (5.3%)
Kaphaja	5 (35.7%)	1 (7.1%)	4 (28.6%)	4 (28.6%)
Vata-Pittaja	6 (18.2%)	4 (27.3%)	8 (54.5%)	0 (0.0%)
Vata-Kaphaja	2 (20.0%)	5 (60.0%)	1 (0.0%)	1 (20.0%)
Pitta-Kaphaja	9 (28.6%)	7 (57.1%)	5 (14.3%)	0 (0.0%)
Tridoshaja/ Sama	7 (53.8%)	6 (46.2%)	0 (0.0%)	0 (0.0%)



Graph 3 : Association of *Rakta Sara* with *Prakriti*

Comparison of *Rakta Sara* % and IQ score among groups

The comparison of *Rakta Sara* percentage among different *Prakriti* groups demonstrated variation in mean values across the categories. However, statistical analysis using one-way ANOVA showed that the differences in *Rakta Sara* percentage among the various *Deha Prakriti* groups were not statistically significant (F=1.49, p=0.189).

The comparison of IQ scores among different *Prakriti* groups demonstrated variation in mean values across the categories. However, statistical analysis using one-way ANOVA revealed that the differences in IQ scores among the various *Prakriti* groups were not statistically significant (F=1.55, p=0.170).

The comparison of IQ scores across different *Rakta Sara* percentage groups showed slight variation in mean values. However, statistical analysis using one-way ANOVA revealed that the differences in IQ scores among the various *Rakta Sara* percentage groups were not statistically significant (F=0.39, p=0.757).

Table 5: Comparison of *Rakta Sara* % and IQ score among different *Prakriti* groups (Mean ± SD)

***Prakriti* group**	***Rakta Sara* %**	**IQ score**
Vataja	69.41 ± 7.28	102.1 ± 18.9
Pittaja	75.18 ± 8.10	117.5 ± 13.0
Kaphaja	78.83 ± 12.98	121.3 ± 18.7
Pitta-Kaphaja	72.90 ± 8.36	121.0 ± 18.2
Vata-Kaphaja	75.77 ± 9.08	114.8 ± 7.3
Vata-Pittaja	75.29 ± 9.86	117.1 ± 13.2
Tridoshaja/ Sama	70.03 ± 6.77	123.2 ± 17.7
ANOVA	F=1.49, p=0.189	F=1.55, p=0.170

Table 6: Comparison of and of IQ score among *Rakta Sara* groups (Mean ± SD)

***Rakta Sara* group**	**IQ score**
60-70%	120.4 ± 18.5
70-80%	116.9 ± 14.9
80-90%	118.2 ± 11.7
90-100%	114.7 ± 22.4
ANOVA	F=0.39, p=0.757

Combined relationship of IQ score with *Rakta Sara* and *Prakriti*

The multiple linear regression analysis was performed to assess the influence of *Rakta Sara* and *Prakriti* on IQ score. The intercept was statistically significant (B=128.79, p<0.001), indicating the baseline IQ score for the reference category *(Tridoshaja/VPK)*. *Rakta Sara* did not show a significant association with IQ score (B=-0.08, p=0.662), suggesting that variations in *Rakta Sara* percentage did not significantly influence IQ in this model. Among the *Prakriti* types, *Vata Prakriti* emerged as a statistically significant predictor, with a negative association (B=-21.16, p=0.008) and a moderate effect size (0.08). This indicates that individuals with *Vata Prakriti* had significantly lower IQ scores compared to the reference category (*Tridoshaja)*.

Table 7: Regression analysis showing relationship of IQ score with *Rakta Sara* and *Prakriti* (Dependent: IQ score)

Parameter	**B**	**SE**	**t-value**	**p-value**	**Effect size**
Intercept	128.79	13.52	9.53	0.000	0.50
Rakta Sara	-0.08	0.18	-0.44	0.662	0.00
Vataja	-21.16	7.86	-2.69	0.008	0.08
Pittaja	-5.25	5.80	-0.90	0.368	0.01
Kaphaja	-1.17	6.34	-0.18	0.854	0.00
Vata-Pittaja	-5.62	6.69	-0.84	0.403	0.01
Pitta-Vataja	-5.79	7.46	-0.78	0.440	0.01
Vata-Kaphaja	-10.77	8.46	-1.27	0.206	0.02
Kapha-Vataja	-4.31	9.14	-0.47	0.639	0.00
Pitta-Kaphaja	-8.47	7.51	-1.13	0.262	0.01
Kapha-Pittaja	1.33	6.14	0.22	0.829	0.00
Tridoshaja	0a (reference)				

DISCUSSION

Demographic profile

The predominance of graduates is an important point to note because IQ assessments are partly influenced by exposure to formal education, problem-solving practice, and cognitive engagement.[14]

Rakta Sara and *Prakriti* distribution

The relative rarity of individuals with extremely high *Rakta Sara* scores (90 to 100 percent) aligns with the Ayurvedic understanding that *Pravara Sarata* or excellent quality of *Dhatu* is naturally less common in the general population. Chakrapani has defined *Sarata* as *Vishuddatara Dhatu*, indicating that the purest and most refined state of *Dhatu* represents a special and somewhat rare physiological excellence.[4] Ayurveda attributes *Sarata* not only to congenital factors at the time of conception but also to ongoing influences of *Ahara* and *Vihara.*

IQ findings and the association of *Rakta Sara* with IQ

Combining the higher intelligence groups, 79% of participants had IQ scores above average, while only 21% were below this level. This finding is highly significant because it aligns very well with the classical Ayurvedic description of *Rakta Sara Purusha* possessing *Uddhatam Medham,* meaning elevated or high intelligence.[6] The strong predominance of above-average intelligence in the study population provides empirical support for the long-standing Ayurvedic observation that individuals with good *Rakta Sara* tend to be intellectually capable.

When the association between *Rakta Sara* and IQ classification was statistically analyzed, the chi-square test showed a value of 17.99 with a p-value of 0.116. This indicates that, although there were some patterns suggesting higher *Rakta Sara* might be linked to higher IQ classification, the relationship did not reach statistical significance. These results need to be interpreted carefully. In such a homogeneous sample, the differences in IQ across different *Rakta Sara* ranges may not be large enough to reach statistical significance.

The lack of strict statistical significance does not invalidate the Ayurvedic claim. Rather, it suggests that *Rakta Sara,* once present above a threshold level, supports good intellectual function generally, without showing dose-dependent linear increases in IQ. Other factors such as *Prakriti, Manasika Dosha,* lifestyle, and environmental exposure may modulate the expression of *Medha* in *Rakta Sara* individuals. *Rakta Dhatu* is associated with blood,[28] mainly focusing on the red blood cells that carry oxygen throughout the body. Adequate cerebral blood flow and oxygenation are essential for maintaining neuronal metabolism, neurotransmitter activity, and higher cognitive processes such as attention, memory, and executive function. Therefore, superior blood quality may contribute to better cognitive performance by supporting optimal brain oxygenation and neural function.[29]

Association of *Prakriti* with IQ

The chi-square test for association between *Prakriti* and IQ classification yielded a value of 39.03 with a p-value of 0.335, while the association between *Prakriti* and IQ above average had a chi-square of 11.27 with a p-value of 0.258. Both results were not statistically significant. *Kapha Dosha* is associated with stability, retention, and patience, qualities that support sustained intellectual effort, memory retention, and *Dharana Shakti*.[30] *Pitta Dosha* is associated with sharpness, intelligence, and analytical capacity, contributing to *Grahana Shakti* (grasping power).[9] The *Tridoshaja* constitution, by virtue of its balanced *Dosha* expression, also supports stable and well-rounded cognitive function.

In contrast, *Vata Prakriti* showed a relatively lower proportion of above-average IQ at only 33.3%. The majority (66.7%) in this group fell below the above-average IQ threshold. This finding is particularly thought-provoking because *Vata* is responsible for movement, including the movement of thoughts and impulses.[31] While *Vata* governs mental activity, an excess of *Vata* qualities such as restlessness, irregularity, and lack of sustained focus may interfere with the consistent expression of *Medha*. *Vataja* individuals are described in classical texts as having quick grasping power but reduced retention.[8] This may explain the observed pattern, where pure *Vata Prakriti* individuals scored lower on standardized IQ assessments that require sustained attention, problem-solving, and visual-motor coordination.

Association of *Prakriti* with *Rakta Sara*

One of the most important and statistically significant findings of this study was the association between *Prakriti* and *Rakta Sara*, with a chi-square value of 43.8 and a p-value of 0.021. This indicates a significant relationship between *Prakriti* (constitutional type) and the gradation of *Rakta Sara*. *Kaphaja Prakriti* individuals showed a relatively higher distribution in the upper *Rakta Sara* ranges, with 28.6% each in the 80 to 90% and 90 to 100% categories. Similarly, *Pittaja* individuals predominantly fell in the 70 to 80% range (52.6%), suggesting that *Pitta* favours moderate to good *Rakta Sara*. Similarly, the absence of *Vataja* individuals in the highest *Rakta Sara* category aligns with the understanding that *Vata,* being *Ruksha* (dry) and *Chala* (mobile), tends to

dehydrate and deplete the *Dhatus,* making it harder to maintain the highest gradations of *Sarata.* This significant association suggests that *Prakriti* plays a definite role in shaping the qualitative excellence of *Rakta Dhatu.*

Regression Analysis

Rakta Sara did not emerge as a significant predictor of IQ in the regression model (B equals minus 0.08, p equals 0.662). The most striking finding from the regression analysis was that *Vata Prakriti* emerged as a statistically significant negative predictor of IQ (B equals minus 21.16, p equals 0.008). This means that individuals with pure *Vataja Prakriti* had IQ scores approximately 21 points lower than the reference group of *Tridoshaja* individuals, with a moderate effect size of 0.08.

It is important to interpret this finding with care. It does not imply that *Vataja* individuals are less intelligent in a general sense. Instead, it suggests that the way their intelligence manifests, especially on tests that require focused performance, may differ from those with *Kapha* or *Pitta* predominant constitutions. *Vataja* individuals may excel in areas requiring creativity, quick thinking, and verbal fluency, which may not be fully captured by the performance tests used here. All other *Prakriti* types in the regression analysis did not show statistically significant associations with IQ. This indicates that, apart from pure *Vata Prakriti,* other constitutional types do not strongly affect IQ within this sample of *Rakta Sara* individuals.

Limitations

The sample size of 100, while adequate for general analysis, became small when subdivided into seven *Prakriti* categories and four *Rakta Sara* gradations, leading to limited statistical power in some subgroup analyses.

The study did not include individuals with *Rakta Sara* below 60 percent, so direct comparison between *Rakta Sara* and non-*Rakta Sara* individuals could not be made.

CONCLUSION

The study provides quantitative empirical support for the classical Ayurvedic concept of *Uddhatam Medha* in *Rakta Sara Purusha,* with 79% of participants showing above-average IQ scores.

A statistically significant association was found between *Prakriti* and *Rakta Sara* (p equals 0.021), indicating that constitutional type influences the qualitative gradation of *Rakta Dhatu*.

Regression analysis revealed that pure *Vata Prakriti* is a statistically significant negative predictor of IQ score, suggesting that an unbalanced predominance of *Vata* may interfere with performance on standardized intelligence tests.

The findings encourage personalised approaches in education, career counselling, and *Medhya* therapy by considering individual *Prakriti* and *Rakta Sara* status.

Future Scope

Future studies should aim for larger and more diverse samples, including individuals from various regions, age groups, educational backgrounds, and socio-economic strata, to enhance generalisability. Comparative studies including non-*Rakta Sara* individuals (below 60%) would help in clearly establishing the unique role of *Rakta Sara* in intelligence.

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