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CRITICAL CORRELATION BETWEEN THE *MAHA-SHIRA* (RELATIVE BREADTH OF HEAD) AND *DEHA PRAKRITI*.

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ABSTRACT

Necessity is the mother of invention. The research phenomenon is not new to *Ayurveda, the* science of life. It emphasizes on understanding the functional and structural constitution of body. *Ayurvedic samhitas* furnish detail descriptions on measurement of different body parts and their elements**.** The word *Maha-shira* has been described in context of *Asthisara purush* in *sushurut Samhita*. Many factors help in identification of *Prakriti* of individuals, and *praman can be one* of the major factors. The concept of *Prakriti* is powerful tool in *Ayurveda*. In classics, *Anguli-Pramana* of different parts of body is categorically mentioned but their relation with *Prakriti* has not been widely dealt with. Human body is composed of three functional energies or humours (Tri-dosha i.e. *Vata, Pitta, Kapha* which are derivatives of *panchmahabhuta.* The relative proportion of *Vata,Pitta and Kapha* in an individual during intra-uterine life determine his/her *Prakriti*. It is described in *Ayurvedic* text that person possessing *Kapha Prakriti* live longer and *Vata Prakriti* person has comparatively shorter life span. The determination of physical, physiological, psychological, and behavioural assessment can be applied clinically in diagnosis, treatment (drug, dose, duration) and prognosis of the disease. Diet and medicinal prescription also vary with *Prakriti.* Relation of *Maha-shira and Prakriti* will further help in developing the concept of *Prakriti.*

Keywords: *Asthisara,* Constitution*, Maha-shira, Prakriti, Pramana.*

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INTRODUCTION

Prakriti is a well-known entity in the field of *Ayurveda*. Prakriti is mainly classified in to three (*Vataja Pittaja* and *Kaphaj Prakriti*) but the combination of the above three gives it a number of seven (three *Ekaj* three *Dwandaj* and one *Sannipataj*). Each *Prakriti* is characterised by some specific physical, physiological and psychological characters. Physiological and psychological characters are more subjective in nature and hence slightly difficult to measure. Physical characters on the other hand are comparatively stable. This thesis is about the *Prakriti* and its relation with a physical character '*Maha-shira*' which is measurable through anthropometry.

Acharya Charaka, while describing the characters of *Vataja, Pittaja* and *Kaphaj Prakriti*, has stated that individuals with *Kapha Prakriti* have longer life span (*Dirghayu*) than the individuals with *Vata Prakriti* which have comparatively shorter life span (*Alpayu*) and the individual possessing *Pitta Prakriti* have a life span in between the two[1]

Acharya Sushruta has mentioned that the person with bigger foot live longer than the person with relatively smaller foot [2].

These two statements suggest that there can be a relation between the *Prakriti* and size of the head of the individual. So this research work is an attempt to give an objective parameter to *Prakriti* with the help of anthropometric measurements.

Ayurveda have mentioned that *Dosha*, *Dhatu* and *Mala*[3] are the three essential components of *Sharira*. These three components are very important as per their functions inside the body. The factors which do the function of *Dharana* of *Sharira*, *Mana*, & *Prana* are called as Dhatu. The basic constructive framework of body is formed by Dhatu. So, the Saptadhatus are the most important factors inside the body. *Dhatus* have same set of functions in every individual but quality & richness of these functions may vary from person to person, which is decided by excellent state of these Dhatus which is nothing but the *Dhatusarta*. Sara is the *Bala* (strength). Sara is fine and excellent part of their Dhatus. The supreme quality of Dhatus with its superb functional

aspect is called the Sara of that Dhatus. Little waning or fasting will not hamper the function of Dhatus immediately if Dhatus is *Sarwan*. So, in Ayurveda, Sara stands for Vishudhatar Awastha[3] of Dhatus.

Dhatusarata is the novel concept described exclusively by Ayurveda. As *Balwan* or *Sarwan* Dhatus resist the vitiated Doshas, similarly they also resist the external factors from the nature which disturbs the equilibrium of Dosha, Dhatus and Mala. So for maintaining healthy status of *Sharir*, the *Dhatus* must be in their *Vishudhatar Awastha* which refered as Dhatusarata in Ayurveda

MATERIALS AND METHODS

Type of Study - Cross Sectional Study

Place of Study - PG Department of Rachana Sharir, Ch. Brahm Prakash Ayurved Charak Sansthan, Khera Dabar, Najafgarh, New Delhi- 110073

Study Methodology- 100 male and 100 female individual of age 18-40 years will be registered in the study. The length and breadth of head will be determined as per SOP developed by the "Project on Ayurgenomics", CBPACS. *Prakriti* of the individual will be determined through *Prakriti* questionnaire developed by CCRAS. Study participant will be enrolled after reading the "subject information sheet" and obtaining informed consent. Data analysis will be done to correlate the dimensions of head and *Ayurvedic Prakriti*

Anthropometric measurement of head

Length of head- Glabella to Opisthocranion

Breadth of Head- Euryon to other Euryon

Inclusion Criteria:

1. Male individuals of age 18-40 will be registered in the study.

Exclusion Criteria:

1. The individual with any congenital or bony deformity of foot will be excluded from the study.
2. Individuals with congenital deformities.
3. Individuals with deformities like fracture, Pathologies pertaining to bone and other metabolic disorders.
4. Individuals who had undergone amputation of limb.

OBSERVATION & RESULT

Distribution of Subjects according to Predominant *Prakriti*:

Observations & Results:

Table – 1: Sex Distribution of Subjects

Sex	No.	%

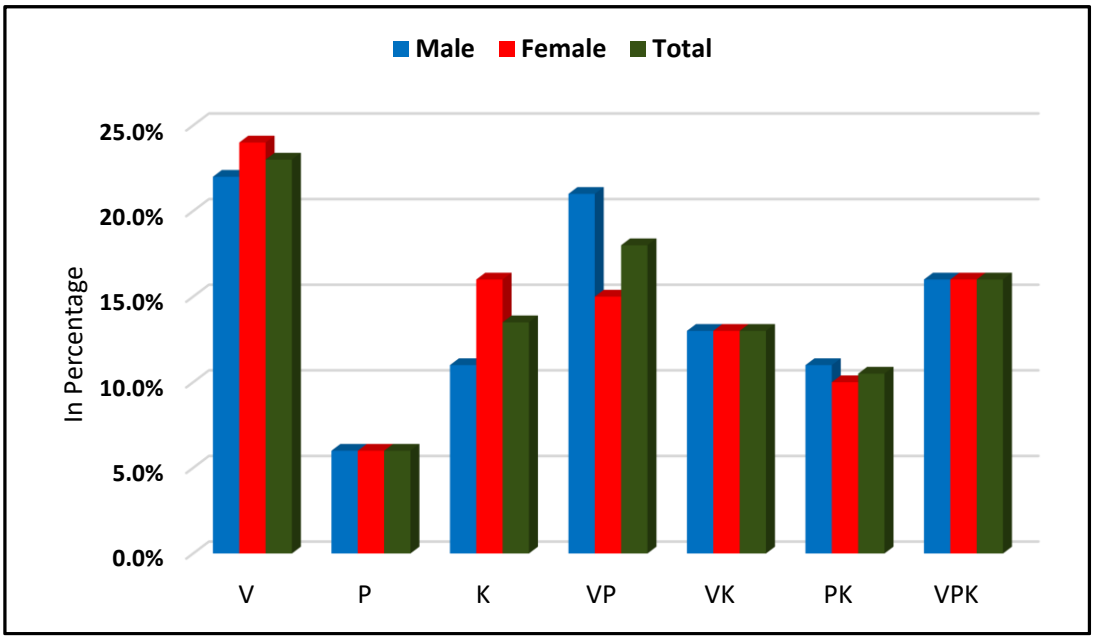
Male	100	50.0
Female	100	50.0
Total	200	100.0

The study subjects consist of 100 males and 100 females. So, both were taken in same proportion.

Table – 2: Age Distribution of Subjects

Age Group	No.	%
20 - 25 yr	51	25.5
26 - 30 yr	65	32.5
31 - 35 yr	31	15.5
36 - 40 yr	53	26.5
Total	200	100.0

Among the study subjects, maximum belonged to the age group 26 – 30 years (32.5%) followed by the age36-40 years (26.5%).



Figure– 1: Distribution of Subjects according to *Prakriti*

Overall the *Vata* (P) *Prakriti* was found in maximum cases (23%) followed by the *Vata-Pitta* (18.0%). Among males again the *Vata* (P) *Prakritis* was found in maximum cases (22%) followed by the VP (21.0%). Among females the *Vata* (P) was found in maximum cases (24%) followed by the K &VPK (16.0%)

Males:

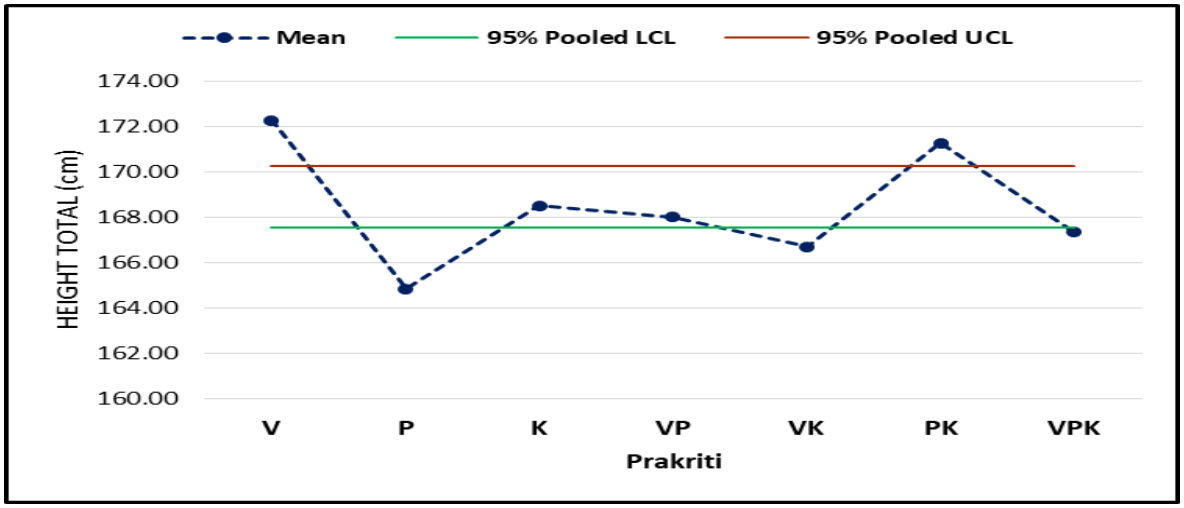


Figure – 2: Intergroup Comparison of TOTAL HEIGHT according to *Prakriti* among Male

Among males, on comparing the mean TOTAL HEIGHT values with *Prakriti*, the ANOVA test showed insignificant difference in mean values of various types of *Prakriti* (p=0.070). However according to control chart analysis, the mean showed significantly higher value for V and PK type of *Prakritis* (These points are lying above the 95% pooled UCL) and lower values for P and VK types of *Prakritis* (These point sare lying below the 95% pooled LCL).

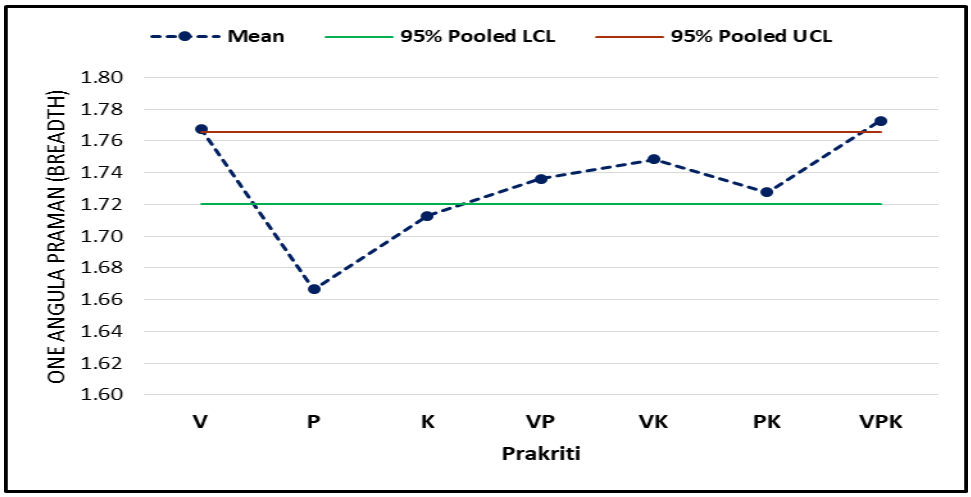


Figure – 3: Intergroup Comparison of CHATURANGULA PRAMAN according to *Prakriti* among Males

Among males, on comparing the mean ONE *ANGULA PRAMAN* (BREADTH) values with *Prakriti*, the ANOVA test showed insignificant difference in mean values of various types of *Prakriti* (p=0.446). However according to control chart analysis, the mean showed significantly higher value for VPK type of *Prakriti* (This point is lying above the 95% pooled UCL) and lower values for P and K type of *Prakriti* (These points are lying below the 95% pooled LCL.

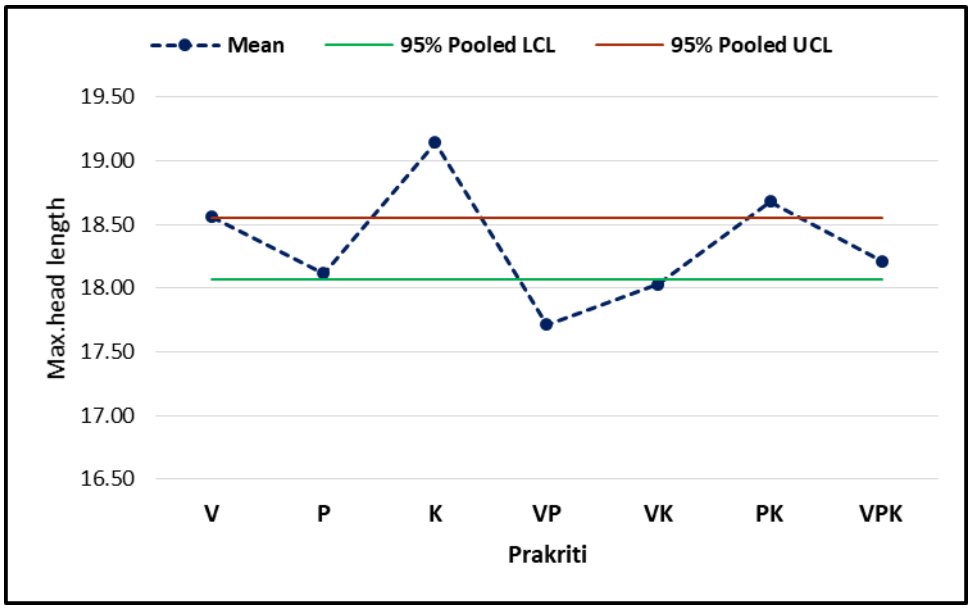


Figure – 4: Intergroup Comparison of Max. Head length according to *Prakriti* among Males

Among males, on comparing the mean Max. head length values with *Prakriti*, the ANOVA test showed significant difference in mean values of various types of *Prakriti* (p=0.031). Further according to control chart analysis, the mean showed significantly higher value for K and PK type of *Prakritis* (These points are lying above the 95% pooled UCL) and lower values for VP and VK types of *Prakritis* (These points are lying below the 95% pooled LCL).

Table 3: Intergroup Comparison of Max head breadth according to *Prakriti* among Males

Prakriti	Max head breadth				F	p-value
	Mean	SD	LCL	UCL		
V	14.43	1.19	13.90	14.95	1.86	0.095
P	14.32	0.83	13.45	15.19		
K	14.98	1.46	14.00	15.96		
VP	13.93	0.58	13.67	14.19		
VK	14.45	0.99	13.85	15.05		
PK	14.85	0.69	14.39	15.32		
VPK	14.49	0.89	14.01	14.96		
Total	14.44	1.01	14.24	14.64		

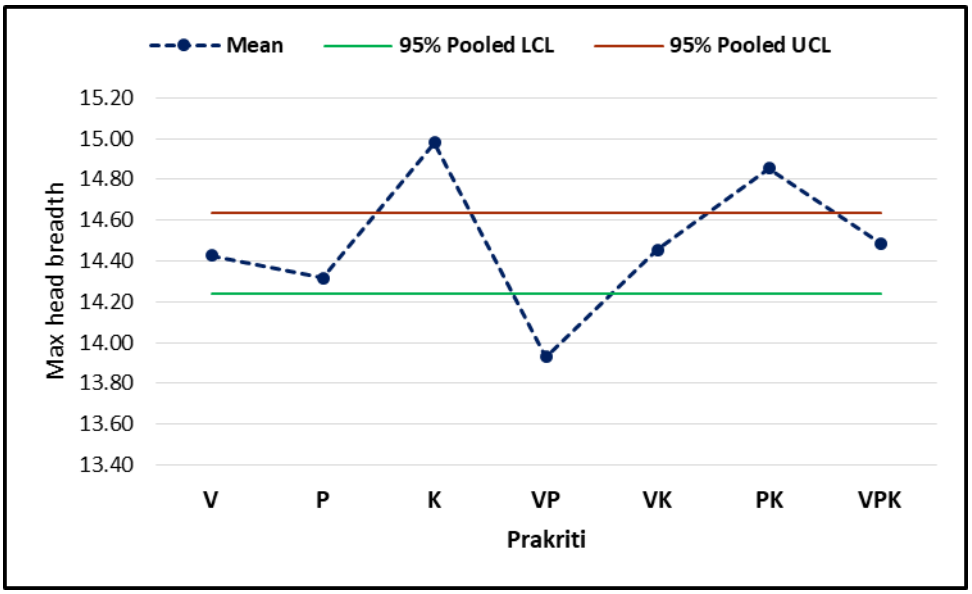


Figure – 5

Intergroup Comparison of Max head breadth according to *Prakriti* among Males

Among males, on comparing the mean Max. Head length values with *Prakriti*, the ANOVA test showed insignificant difference in mean values of various types of *Prakriti* (p=0.095). However according to control chart analysis, the mean showed significantly higher value for K and PK type of *Prakritis* (These points are lying above the 95% pooled UCL) and lower values for VP type of *Prakriti* (This point is lying below the 95% pooled LCL).

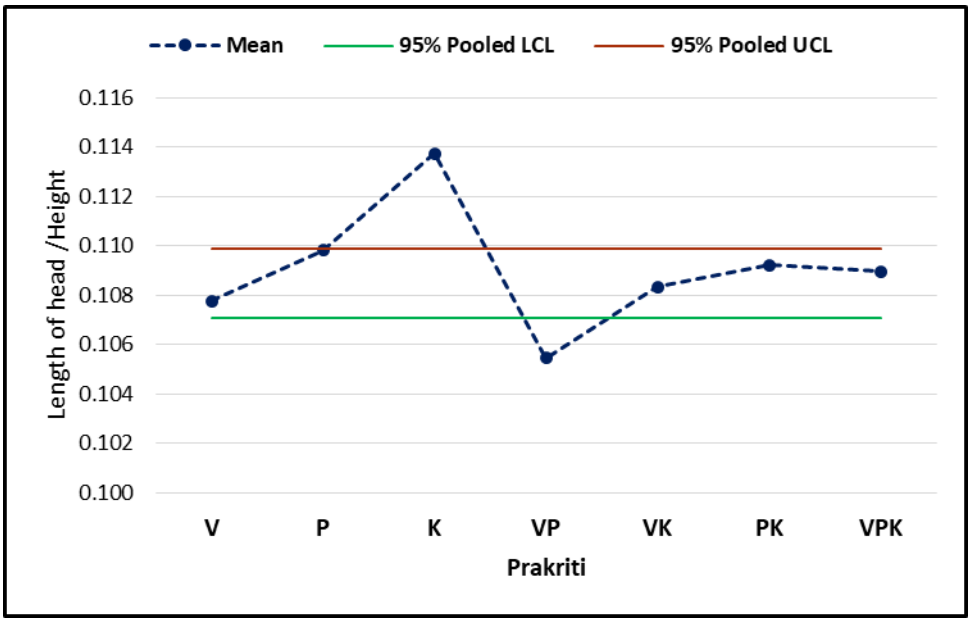


Figure – 6: Intergroup Comparison of Length of head/Height according to *Prakriti* among Males

Among males, on comparing the mean Length of head /Height values with *Prakriti*, the ANOVA test showed insignificant difference in mean values of various types of *Prakriti* (p=0.094). However according to control chart analysis, the mean showed significantly higher value for K type of *Prakriti* (This point is lying above the 95% pooled UCL) and lower values for VP type of *Prakriti* (This point is lying below the 95% pooled LCL).

Table 4: Intergroup Comparison of Breadth of head/ Height according to *Prakriti* among Males

Prakriti	Breadth of head/ Height				F	p-value
	Mean	SD	LCL	UCL		
V	0.084	0.007	0.081	0.087	1.69	0.132
P	0.087	0.003	0.084	0.090		
K	0.089	0.008	0.083	0.095		
VP	0.083	0.005	0.081	0.085		
VK	0.087	0.008	0.082	0.092		

PK	0.087	0.005	0.084	0.090		
VPK	0.087	0.006	0.084	0.090		
Total	0.086	0.006	0.084	0.087		

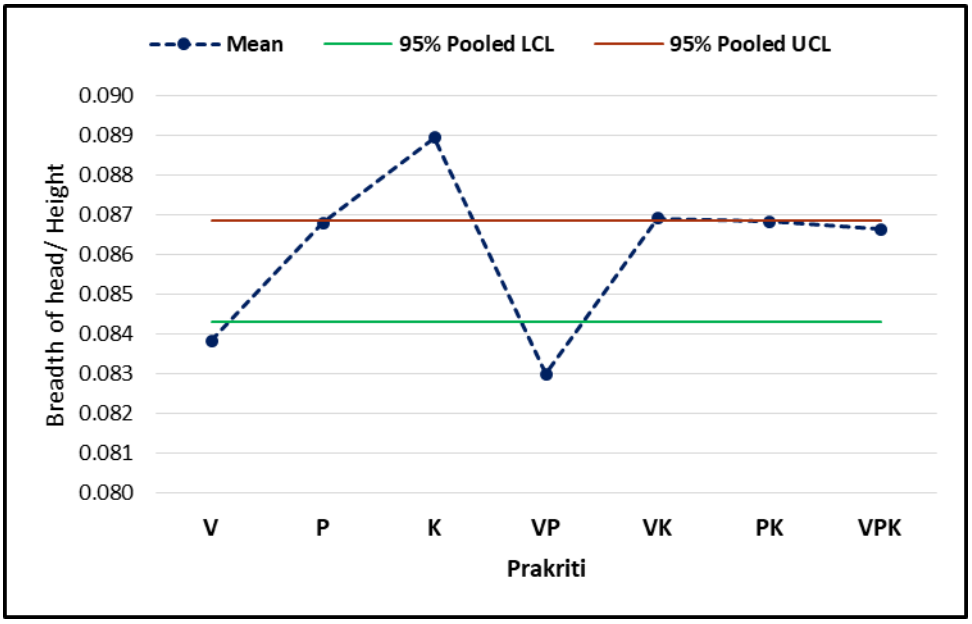


Fig 7 : Intergroup Comparison of Breadth of head/ Height according to *Prakriti* among Males

Among males, on comparing the mean Breadth of head /Height values with *Prakriti*, the ANOVA test showed insignificant difference in mean values of various types of *Prakriti* (p=0.132). However according to control chart analysis, the mean showed significantly higher value for K type of *Prakriti* (This point is lying above the 95% pooled UCL) and lower values for V and VP type of *Prakritis* (These points are lying below the 95% pooled LCL).

Females:

Table5: Intergroup Comparison of HEIGHT TOTAL according to *Prakriti* among Females

Prakriti	HEIGHT TOTAL				F	p-value
	Mean	SD	LCL	UCL		
V	157.16	6.14	154.56	159.75	0.64	0.700

P	159.17	5.32	153.59	164.75		
K	158.09	6.42	154.67	161.52		
VP	157.67	6.46	154.09	161.24		
VK	159.27	5.55	155.92	162.62		
PK	155.18	3.52	152.66	157.69		
VPK	158.06	3.92	155.97	160.15		
Total	157.73	5.55	156.63	158.83		

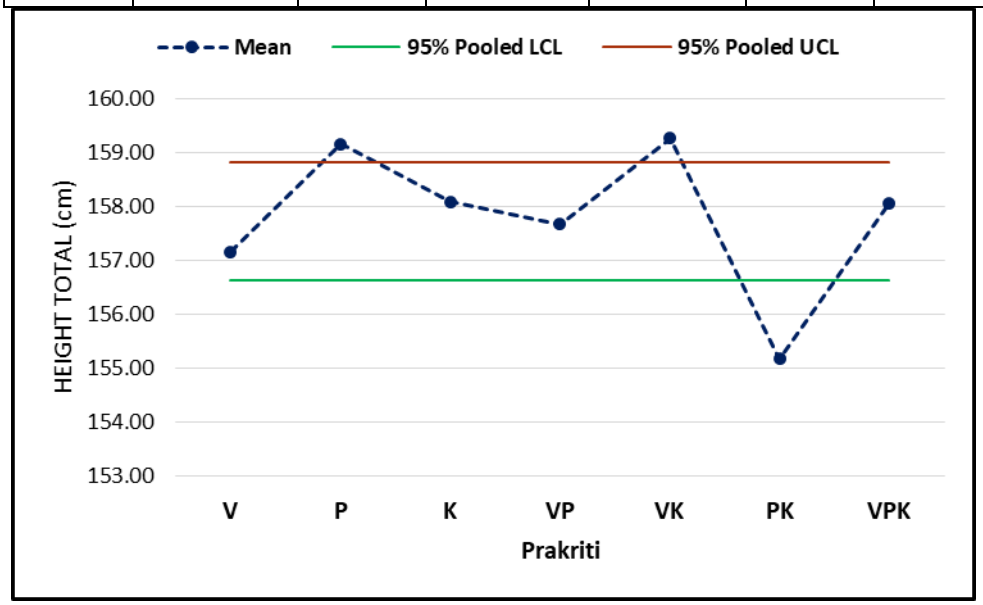


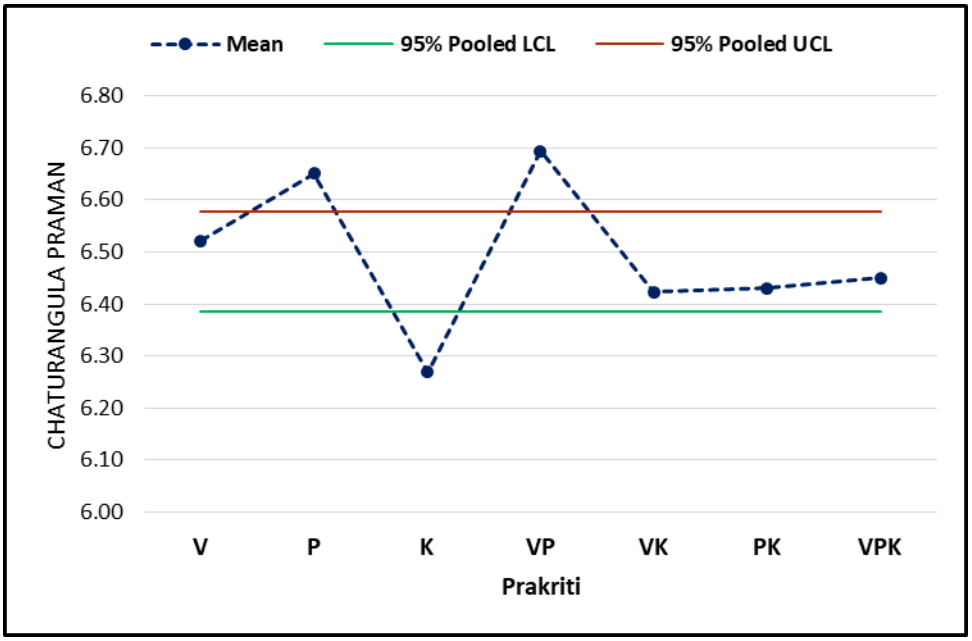
Fig 8. Intergroup Comparison of HEIGHT TOTAL according to *Prakriti* among Females

Among females, on comparing the mean HEIGHT TOTAL values with *Prakriti*, the ANOVA test showed insignificant difference in mean values of various types of *Prakriti* (p=0.700). However according to control chart analysis, the mean showed significantly higher values for P & VK type of *Prakritis* (These points are lying above the 95% pooled UCL) and lower values for PK type of *Prakriti* (This point is lying below the 95% pooled LCL).

Table 6: Intergroup Comparison of *CHATURANGULA PRAMAN* according to *Prakriti* among Females

Prakriti	*CHATURANGULA PRAMAN*	F	p-value

	Mean	SD	LCL	UCL		
V	6.52	0.53	6.30	6.74	1.23	0.297
P	6.65	0.58	6.04	7.26		
K	6.27	0.42	6.05	6.49		
VP	6.69	0.55	6.39	7.00		
VK	6.42	0.34	6.21	6.63		
PK	6.43	0.44	6.11	6.75		
VPK	6.45	0.45	6.21	6.69		
Total	6.48	0.48	6.39	6.58		



Fog .9 Intergroup Comparison of *CHATURANGULA PRAMAN* according to *Prakriti* among Females

Among females, on comparing the mean *CHATURANGULA PRAMAN* values with *Prakriti*, the ANOVA test showed insignificant difference in mean values of various types of *Prakriti* (p=0.297). However according to control chart analysis, the mean showed significantly higher values for P & VP type of *Prakritis* (These points are

lying above the 95% pooled UCL) and lower values for K type of *Prakriti* (This point is lying below the 95% pooled LCL).

Table 7: Intergroup Comparison of ONE *ANGULA PRAMAN* (BREADTH) according to *Prakriti* among Females

Prakriti	ONE *ANGULA PRAMAN* (BREADTH)				F	p-value
	Mean	SD	LCL	UCL		
V	1.63	0.13	1.57	1.68	1.01	0.422
P	1.66	0.14	1.51	1.81		
K	1.57	0.11	1.51	1.63		
VP	1.67	0.14	1.60	1.75		
VK	1.61	0.09	1.56	1.67		
PK	1.61	0.10	1.54	1.69		
VPK	1.61	0.11	1.55	1.67		
Total	1.62	0.12	1.60	1.65		

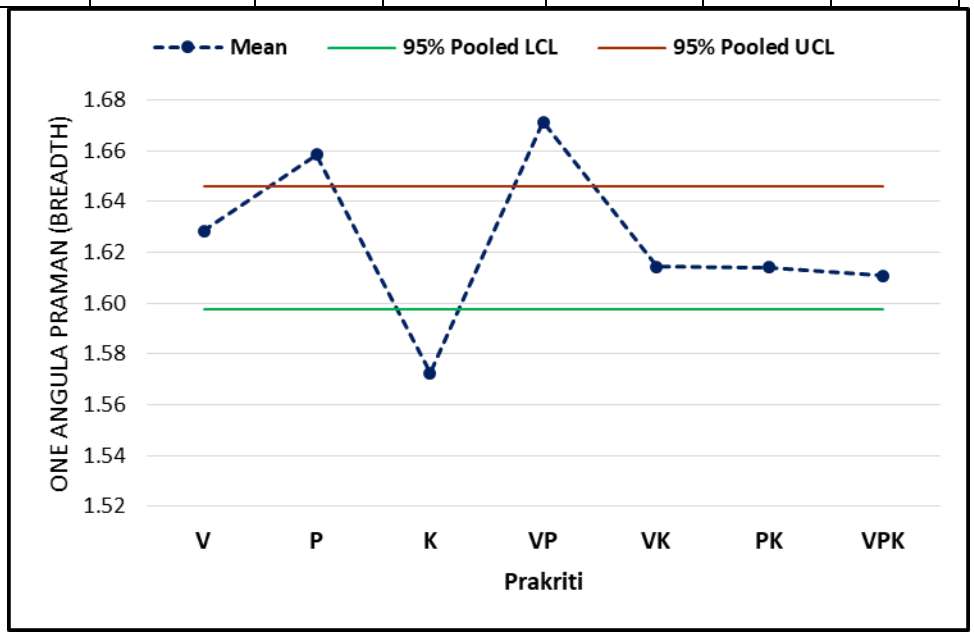


Fig 10. Intergroup Comparison of ONE *ANGULA PRAMAN* (BREADTH) according to *Prakriti* among Females

Among females, on comparing the mean ONE *ANGULA PRAMAN* (BREADTH)values with *Prakriti*, the ANOVA test showed insignificant difference in mean values of various types of *Prakriti* (p=0.422). However according to control chart analysis, the mean showed significantly higher values for P & VP type of *Prakritis* (These points are lying above the 95% pooled UCL) and lower values for K type of *Prakriti* (This point is lying below the 95% pooled LCL).

Table 8: Intergroup Comparison of Max. head length according to *Prakriti* among Females

Prakriti	Max. head length				F	p-value
	Mean	SD	LCL	UCL		
V	17.35	1.08	16.89	17.80	0.83	0.553
P	17.88	1.21	16.61	19.15		
K	17.52	1.49	16.72	18.31		
VP	17.36	1.09	16.75	17.97		
VK	17.73	1.23	16.99	18.47		
PK	17.83	1.35	16.86	18.80		
VPK	17.01	0.98	16.49	17.54		
Total	17.45	1.19	17.22	17.69		

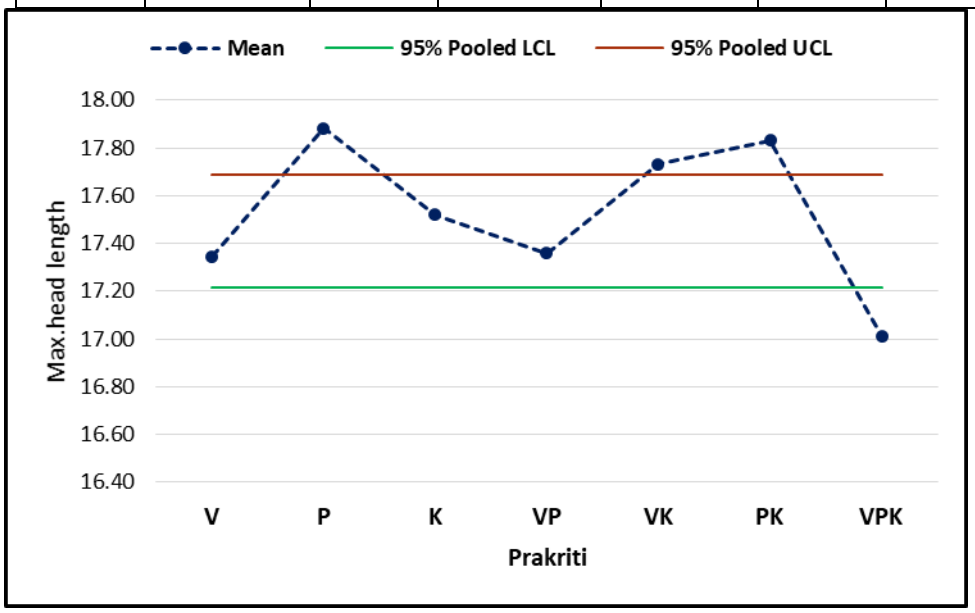


Fig. 11 Intergroup Comparison of Max. head length according to *Prakriti* among Females

Among females, on comparing the mean Max. head length values with *Prakriti*, the ANOVA test showed insignificant difference in mean values of various types of *Prakriti* (p=0.553). However according to control chart analysis, the mean showed significantly higher values for P, VK & PK type of *Prakritis* (These points are lying above the 95% pooled UCL) and lower values for VPK type of *Prakriti* (This point is lying below the 95% pooled LCL).

Table 9: Intergroup Comparison of Max. head Breadth according to *Prakriti* among Females

Prakriti	Max head breadth				F	p-value
	Mean	SD	LCL	UCL		
V	13.59	0.76	13.27	13.91	1.85	0.097
P	14.45	1.09	13.30	15.60		
K	14.49	1.67	13.60	15.38		
VP	13.66	1.21	12.99	14.33		
VK	13.90	0.93	13.34	14.46		
PK	14.33	1.53	13.24	15.42		
VPK	13.53	0.76	13.12	13.94		
Total	13.90	1.17	13.67	14.13		

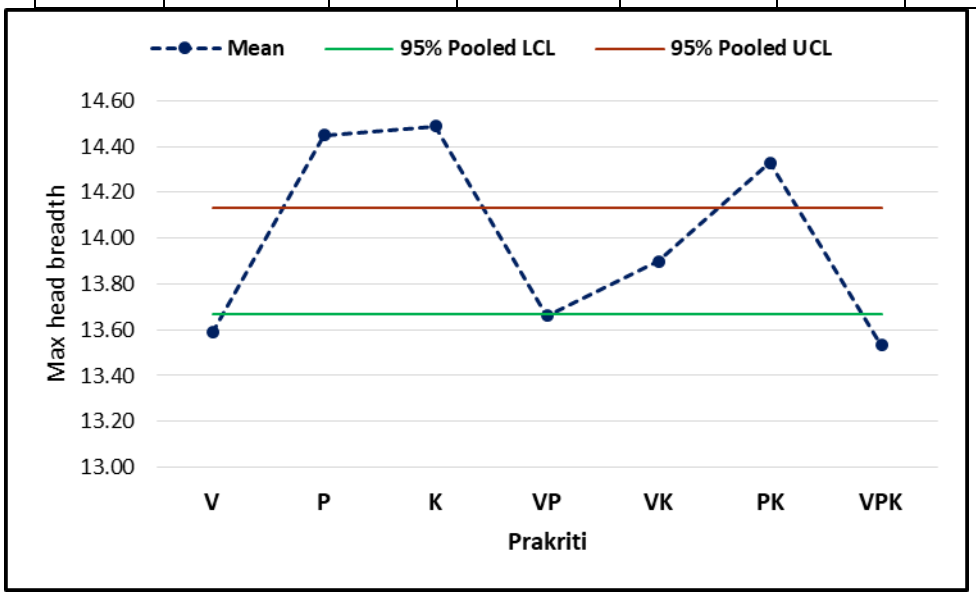


Fig. 12: Intergroup Comparison of Max. head Breadth according to *Prakriti* among Females

Among females, on comparing the mean Max. head breadth values with *Prakriti*, the ANOVA test showed insignificant difference in mean values of various types of *Prakriti* (p=0.097). However according to control chart analysis, the mean showed significantly higher values for P, K & PK type of *Prakritis* (These points are lying above the 95% pooled UCL) and lower values for V & VPK type of *Prakriti* (These points are lying below the 95% pooled LCL).

Table 10: Intergroup Comparison of Length of head /Height according to *Prakriti* among Females

Prakriti	Length of head /Height				F	p-value
	Mean	SD	LCL	UCL		
V	0.111	0.009	0.107	0.114	0.77	0.594
P	0.113	0.009	0.103	0.122		
K	0.111	0.010	0.106	0.116		
VP	0.110	0.010	0.105	0.116		
VK	0.111	0.009	0.106	0.117		
PK	0.115	0.009	0.108	0.122		
VPK	0.108	0.006	0.104	0.111		
Total	0.111	0.009	0.109	0.113		

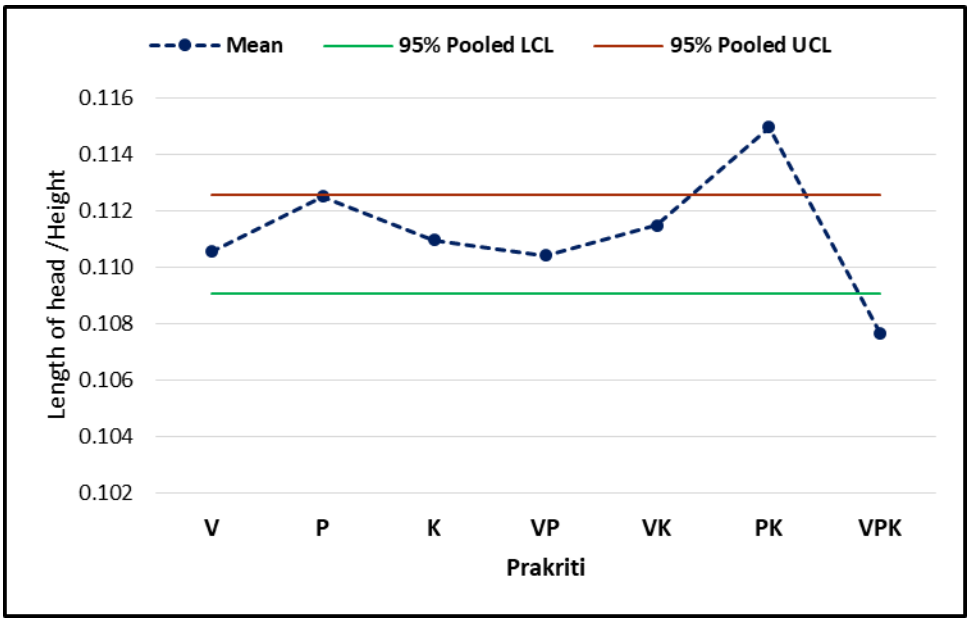


Fig. 13 Intergroup Comparison of Length of head /Height according to *Prakriti* among Females

Among females, on comparing the mean Length of head /Height values with *Prakriti*, the ANOVA test showed insignificant difference in mean values of various types of *Prakriti* (p=0.594). However according to control chart analysis, the mean showed significantly higher values for PK type of *Prakriti* (This point is lying above the 95% pooled UCL) and lower values for VPK type of *Prakriti* (This point is lying below the 95% pooled LCL).

Table 11: Intergroup Comparison of Breadth of head /Height according to *Prakriti* among Females

Prakriti	Breadth of head/ Height				F	p-value
	Mean	SD	LCL	UCL		
V	0.087	0.007	0.084	0.089	1.55	0.170
P	0.091	0.009	0.081	0.101		
K	0.092	0.010	0.086	0.097		
VP	0.087	0.009	0.082	0.092		
VK	0.087	0.007	0.083	0.092		
PK	0.092	0.011	0.085	0.100		

VPK	0.086	0.005	0.083	0.088		
Total	0.088	0.008	0.087	0.090		

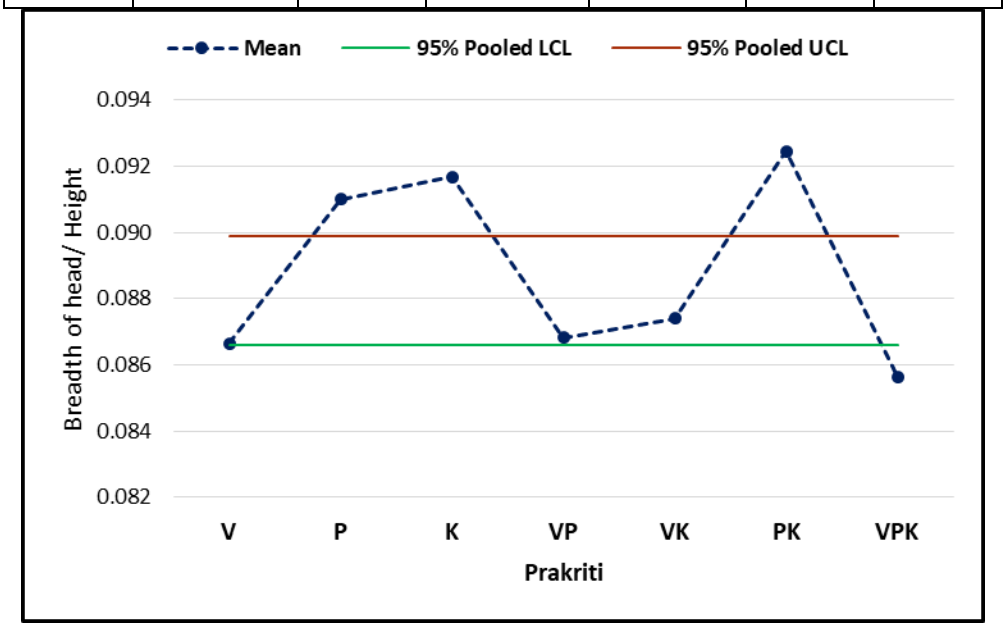


Fig.14: Intergroup Comparison of Breadth of head /Height according to *Prakriti* among Females

Among females, on comparing the mean Breadth of head /Height values with *Prakriti*, the ANOVA test showed insignificant difference in mean values of various types of *Prakriti* (p=0.170). However according to control chart analysis, the mean showed significantly higher value for P, K & PK type of *Prakritis* (These points are lying above the 95% pooled UCL) and lower values for VPK type of *Prakritis* (This point is lying below the 95% pooled LCL).

CONCLUSION

This study indicated there is significant relationship between head Index and *Prakriti*.

- In males if the indices length relative to height and breadth relative to height and average length and breadth of head are taken into account then *Maha-shira* has relation with K *Prakriti*.
- In males lower length and breadth indices of head are associated to VP *Prakriti*.
- In females if the indices length relative to height and breadth relative to height and average length and breadth of head are taken into account then *Maha-shira* has relation with P, K, PK *Prakriti*. In females lower length and breadth

indices of head are associated to VPK *Prakriti*.

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