

## ASSESSMENT OF BAHU AND VALIDATION OF PRALAMBA BAHU IN INDIVIDUALS WITH DIFFERENT DEHAPRAKRITI

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### ABSTRACT

*Prakriti* is one of the topic which has leveled up *Ayurved* from traditional science to modern science, to set a concrete base when it comes to study human behavior by all means. Features mentioned in *Ayurvedic* texts under *Prakriti*, needs a suitable criteria for assessment and its validation. The current topic is studied for validation of *Pralamb bahu* as one of the feature under *Kapha Prakriti*. It was studied in terms of *Anguli pramana*. **Aims & Objectives** – To assess *Bahu* in different *Prakriti* individuals. To validate the existence of *Pralamba Bahu* in *Kapha doshaja Prakriti*. **Methodology**- 100 students from GJP-IASR institute Anand, Gujarat were selected for the study. After assessing there *Dehaprakriti*, anthropometrics - *Swa-Anguli pramana* of their upper extremity were measured using measuring tape. **Observations** – Only 30 out of 100 volunteers were having dimensions of *Bahu* above 43 *Anguli* with male female ratio

13:17 respectively. The mean value of *Bahu* for left and right side was 46.30 *Anguli* and 46.53 *Anguli* respectively. The minimum – maximum range for *bahu* on left side was 43.1 *Anguli* to 51.3 *Anguli*, the same for right side was 43.1 *Anguli* to 51.9 *Anguli*. **Discussion and Conclusion** – Out of all the subjects showing feature of *Pralamba Bahu*, the majority of the population (63.33%) involves *Kapha dosha* in their constitutional make-up. A total of nine individuals (30%) were belonging to *Kapha dominant Prakriti* reflecting *Pralamba Bahu* as

per *Kapha doshaja Prakriti*. The involvement of *Kapha dosha* in formation of *Prakriti* in this case is clearly indicative of major contribution of *Kapha dosha* in the development of extensively longer upper extremities manifesting *Pralamba Bahu*.

**KEYWORDS:** Prakriti, Anguli pramana. Pralamba Bahu, Kapha Prakriti.

## INTRODUCTION

*Prakriti* extensively explains the biological adversity working subtly from genomic level to gross individual level discriminating individuals in their different zones of physical, psychological, social and spiritual aspect. *Prakriti*, this concept from traditional science has now a days acquired a lot of importance especially from western schools of medicine too. The features mentioned under *Prakriti* during ancient *Ayurvedic* texts needed to be challenged in current modern era and should be validated using proper tools. In case of physical features, the growth and development of any organ or whole body is outcome of the contribution of *sharir doshas* involved in their constitutional make-up.

Researchers of this study were keen about the same aspect mentioned above and they tried to carry forward the assessment of *Bahu* and validation of *Pralamba Bahu* of *Kapha doshaja Prakriti*.<sup>[1]</sup>

## AIMS AND OBJECTIVES

- 1) To assess the dimensions of physical feature *Bahu* in standard metric units and *Anguli pramana* as well.
- 2) To assess the existence of *Pralamba Bahu* in different *Deha Prakriti* (if any) individuals.
- 3) To validate the feature of *Pralamba Bahu* in *Kapha doshaja Prakriti*.

## METHODOLOGY

❖ 100 student volunteer from the GJP-IASR institute were selected for the study, the same institute where the researchers are working as a faculty.

❖ *Prakriti* of each individual was there after assessed using the format of Gujarat Ayurved University, *Kriya Sharir Syllabus* journals.

❖ **Assessment of *swa – anguli praman***

***Swa – Anguli Praman:*** Distance between the medial and lateral edges of middle finger of both right and left upper extremities was noted using measuring tape, for *Swa – Anguli*

*parikshan*.<sup>[1]</sup> To prevent biasness, average mean of both was drawn out and converted to cm. This is shown here - Mean =  $(Rt + Lt) / 2 = \dots\dots\dots$  cm; (1 *Anguli* =  $\dots\dots\dots$  cm).

#### ❖ *Bahu* assessment

**Extent:** The distance between acromioclavicular joint to the tip of middle finger was noted using measuring tape. *Bahu* =  $\dots\dots\dots$  cm =  $\dots\dots\dots$  Anguli.

❖ After proper observed values of *Swa – Anguli* and *Bahu*, the individuals who were having length of *Bahu* more than 43 *Anguli*<sup>[2]</sup> were selected for statistical analysis.

❖ The observed data was then analyzed and classified in *dwandwaja Prakriti*.

❖ Individual having *Pralamba Bahu* of different *Deha Prakriti* were selected for suitable statistical analysis and calculations were carried out.

❖ Conclusion based on relationship between *Pralamba Bahu* and *Kapha Prakriti* was highlighted thereafter and put forth.

**Review of literature:** *Prakriti*, in Ayurveda refers to a genetically determined physical and mental constitution of an individual. Every person has his/her own unique constitution which determines the physical characteristics, behavioural pattern, social response and even susceptibility towards diseases. Thus *Prakriti* makes one of the early known concepts of preventive and personalized medicine. The three physical humors present in body viz. *Tridoshas*<sup>[3]</sup> manifest a typical *Prakriti* of an individual at the time of birth.<sup>[4]</sup> The dominance of *doshas*<sup>[5]</sup> reflects its maximum characters in that individual. Three *doshas* less or more contribute in overall development of that individual. The features mentioned in *Prakriti* in ancient Ayurvedic texts are suggestive of involvement of *doshas* in the development of a particular structure at physical level, tendency towards performance of an act at psychological level, social behaviour and many more.

The variation in the morphological structures can be seen in different *Prakriti* individuals or even in individuals with same *Prakriti* also. This is suggestive of the percentage of contribution of *doshas* in development of that organ or process or behaviour. *Alpa* (less and not more), *dirgha* (long and not broad), *tanu* (thin and not thick) are the words used in favour of any structure manifesting dominance of *Vata dosha*<sup>[6]</sup> in development of the same. *Madhyam* (medium sized), *sukumar* (delicate) are used for development of structure involving *Pitta dosha*<sup>[7]</sup> as a prominent one. Whereas, *vishal* (large), *sthula* (thick), *maha* (broad and extensive) are used where structures showing dominance of *Kapha dosha*<sup>[8]</sup> in its development.

The feature *Pralamba Bahu* mentioned under *Kapha Prakriti* means – extensively long hanging upper extremity.

(*Pralamb* – Hanging down, depending

*Bahu* – The arm, specially forearm

The whole upper extremity of the body - **Long upper extremity**)<sup>[9]</sup>

The dimensions of *Bahu* mentioned in Ayurvedic text is 43 *Anguli* as a length from acromioclavicular joint on the shoulder till tip of middle finger of upper extremity. Researchers were keen about the percentage wise contribution and involvement of *doshas* in the making of morphological structures inside the body. Thus selection of topic was done thereby.

**Observations:** A total of 100 students were selected for the assessment of biophysical parameters of *Bahu*. Only those who manifested the features of – *Pralamba Bahu* (above 43 *Anguli*) were selected for statistical analysis. The detailed observations are mentioned below.

1) **Observations for *prakriti*:** 100 subjects were selected for this study which were classified as per *Prakriti* and were also assessed for *Pralamba Bahu*. Out of which a total of 30 subjects were found with *Pralamba Bahu*.

All the 30 subjects as per their *Prakriti* consists of 13 males and 17 females.

**Table No. 01. Table showing distribution of subjects having *Pralamba Bahu* as per *Prakriti*.**

<i>Vata Pradhan Prakriti</i>		<i>Pitta Pradhan Prakriti</i>		<i>Kapha Pradhan Prakriti</i>		Total
VP	VK	PV	PK	KV	KP	
07	02	04	08	01	08	30
09		12		09		

2) **Observations for *pralamba bahu***

**Table No. 02. Table showing Mean, Minimum and Maximum values of subjects showing *Pralamba Bahu*.**

Sr. No	Particulars	<i>Bahu Lt.</i>	<i>Bahu Rt.</i>
1	Mean	46.30	46.53
2	Minimum	43.1	43.1
3	Maximum	51.3	51.9
4	Population	30	30

- ❖ Only 30 out of 100 volunteers were noted having dimensions of *Bahu* above 43 *Anguli* thus claiming *Pralamba Bahu*. Only those individuals showing length of both the extremities more than 43 *Anguli* were selected and not such individuals having length, either of both upper extremities more than 43 *Anguli*.
- ❖ The mean value of *Bahu* in left side was – 46.30 *Anguli* while the same in right side was – 46.53 *Anguli*.
- ❖ All the dimensions of left *Bahu* were within the range of minimum 43.1 *Anguli* to a maximum of 51.3 *Anguli*.
- ❖ All the dimensions of right *Bahu* were within the range of minimum 43.1 *Anguli* to a maximum of 51.9 *Anguli*.
- ❖ A majority of population about 19 subjects (63.33%) showing *Pralamba Bahu* were physically constituted with either *Kapha dosha* dominant in them or *Kapha dosha* even being secondary might be involved in development of *Pralamba Bahu* feature in them.

## RESULTS AND DISCUSSION

- ❖ As of now, no any specific criterion has been mentioned to decide validity of features like *Pralamba Bahu* as mentioned in *Ayurvedic* treatises, hence this study was done to set some standard criteria for deciding this as well as all other similar features which helps us to know about the individual having *Kapha Prakriti*.
- ❖ Measurement of *Bahu* as mentioned in ancient *Ayurvedic* treatises was distributed in three stages. Firstly from acromioclavicular joint over shoulder till the olecranon process of ulna claimed to be *Prabahu*, as – 16 *Anguli*. Secondly from olecranon process of ulna till the lateral prominence of radius at wrist namely *Prapani*, as – 15 *Anguli*. Lastly from lateral prominence of radius till the tip of middle finger called as *Hasta*, as – 12 *Anguli*.<sup>[10]</sup>
- ❖ The overall *bahu* or *bhuja* is actually addition of all above measurements which together constitutes as 43 *Anguli*. Thus dimension of *Bahu* more than 43 *Anguli* is defined as *Pralamba Bahu*.
- ❖ The phrase *Pralamba Bahu* and other similar terms like *Pruthupina Vaksha*, *Mahalalat* are mentioned in *Ashtang Hridayam*<sup>[11]</sup> but still there is no any specific comment about the dimension of above features mentioned in the same text. Whereas *Charak Samhita*<sup>[12]</sup> opines it irrespective of the nomenclature as stated above, clearly mentions the dimensions of above features and same by *Ashtang Samgraha*.<sup>[13]</sup>

❖ However, there is no specific justification in ancient *Ayurvedic* treatises about actual measurement regarding assessment of *Anguli pramana*. Even though today many of *Ayurvedic* experts have developed different ways for assessment of *Anguli pramana*. As per the context the distance between two edges – medial and lateral, of proximal interphalangeal joint is considered for the same.<sup>[14]</sup> There is possibility of having differences in organs on bilateral side. Thus the final *Anguli pramana* goes by taking average mean of the medial and lateral edge distances of proximal interphalangeal joint taken on both sides.

❖ This study showed that out of 100, 30 subjects were found to have *Pralamba Bahu*. Out of these 30, 19 are having *Kapha dosha* association in their *Prakriti*, which confirms the relationship of *Pralamba Bahu* with *Kapha dosha*.

❖ *Sandra* and *Saara*, *guna* of *Kapha* are responsible for good development and firmness, stability for the body parts. *upachita paripurna sarvanga*, *saara samhata sthira sharira* are the features in *Kapha Prakriti*<sup>[15]</sup>, which are responsible for *Bala* (strength) and longevity of Life. *Pralamba Bahu* is long and well developed extremities showing *upachita sharir*. Well-nourished and full-fledged above *guna* of *Kapha dosha* seems to be responsible for the development of features like *Pralamba Bahu* occurring in *Kapha Prakriti*.

❖ Study with larger sample size will be even more helpful in strengthening this criteria for *Pralamba Bahu* and likewise all other physical features mentioning dimensions of specific organs can also be studied.

❖ Knowing ancient anthropometrics – *Anguli pramana* examination of one enriches us the knowledge about *samapramana* (well proportionate) *sharir*. *Sama pramana sharir* ultimately endows one with good quality in *Ayu*, *Bala*, *Oja*, *Sukha*, *Aishwarye*, *Vitta*.<sup>[16]</sup> This overall shows own need and importance of study of *Anguli pramana*.

❖ *Dirgha bahu* is also mentioned under features of *dirghaayu* in *Sushruta Samhita*.<sup>[17]</sup> Also *dirghaayu* is mentioned under *Kapha Prakriti* features. Thus it is clearly indicative of the valuable contribution of *guru*, *sthira*, *sara*, *sandra guna* of *kapha dosha* in making of *kapha prakriti* and enhancing longevity of life.

## CONCLUSION

1) The ancient *Anguli praman* and other anthropometric dimensions can be studied and validated more easily in current era.

- 2) Out of all the subjects showing feature of *Pralamba Bahu*, the majority of the population (63.33%) involves *Kapha dosha* in their constitutional make-up.
- 3) 30% of total population showing *Pralamba Bahu* is nearly contributed by the individuals with *Kapha Pradhan Prakriti* where *Kapha dosha* is dominant.
- 4) The involvement of *Kapha dosha* in formation of *Prakriti* in this case is clearly indicative of major contribution of *Kapha dosha* in the development of body organs thus reflecting the well-developed physical structures.<sup>[18]</sup>
- 5) Researchers hereby clearly suggest that individuals having length of a whole upper extremity from acromioclavicular joint over the shoulder till the tip of middle finger more than 43 Anguli pramana as per their respective *Swa-Anguli Pramana*, will be considered manifesting – *Pralamba Bahu*.

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