



CORRELATION OF RELATIVE HEIGHT OF FOREHEAD AND AYURVEDIC PRAKRITI OF MALE INDIVIDUALS IN AYURVEDIC PRAMANA SHARIR- AN OBSERVATIONAL STUDY

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Abstract

Philosophy and science can go hand in hand. They complement each other. On one hand philosophy deals with principles of qualitative nature and on the other hand, science quantifies the basic principles of philosophy. Science is materialistic counterpart of spiritualistic philosophy. *Ayurveda* is a blend of two. Most principles of *Ayurveda* are of subjective nature like *Tridosha*, *Prakriti*, *Panch-mahabhutas*, etc. These principles are based upon deep rooted laws of nature and hold good in day-to-day *Ayurveda* practices. *Ayurveda* has also attempted to measure these natural principles through the concept of *Pramana* (measurements). Though the concept of *Pramana* is there yet it has been further applied to explain the concepts of *Ayurveda* on objective criteria to an extent only. An attempt to use *Pramana* as one of the factor to postulate concept of *Prakriti* has been made here. This work will establish concept of *Prakriti* on one of the objective parameter and will open the opportunity to carry out work on the similar plan in future too.

Introduction

Ayurveda has attempted to measure the natural principles like *tridosha*, *panchmahabhoota*, *prakriti*, etc. through the concept of *Pramana* (measurements). In *Ayurveda*, the term *Anguli* (width of one's own finger) has been accepted as smallest unit of measurement.^{1,2,3} But now a days, Anthropometry is used to measure different parts of human body. Anthropometry is a term composed of two Greek words of (*Anthropos*), meaning human and (*metrin*), meaning measurement and it is the science of measuring the dimensions of human body and it is applied in various fields such as studying the normal growth of individuals, clinical examination of people and people with facial abnormalities.⁴ Concept of *Prakriti* is a powerful tool in *Ayurvedic* treatment. *Prakriti* represents constitution of the body created at the time of birth presenting a set of traits which guide the individual throughout the life.⁵

Anthropometric measurements have relation with both of the *Ayurvedic* concepts, *Angula Pramana* and *Prakriti*. The *Angula Pramana* represents the various norms of measurement of different body parts whereas *Prakriti* represents the traits of a particular individual which could never be changed throughout life. These traits also represent the physique of a particular individual. For example- *Vattika Prakriti* people are *Krisha* or thin⁶, whereas *Kaphja* are *Sthula* or dense or bulky.

It has been stated subjectively, while describing the traits of *Vata-Pitta-Kapha Prakriti* in *Ayurvedic* text that individuals possessing *Kapha-Prakriti* live longer⁷ and *Vata-Prakriti* individuals are comparatively short-lived⁸ whereas *Pitta-Prakriti* individuals have a life span in between the two.⁹ At the same time, it is also mentioned that individuals with broader forehead live longer than individuals with relatively shorter forehead. Above two statements can be viewed together to deduce that *Kapha-*

Prakriti individuals have broader forehead than *Vata-Prakriti* individuals. Forehead of *Pitta-Prakriti* individual is relatively shorter than *Kapha-Prakriti* and broader than *Vata-Prakriti*.

To establish a correlation between relative height of forehead and *Ayurvedic Prakriti*, the present study examined three hundred and fifty male individuals in between 15-40 age groups with normal facial pattern and who do not suffer from any congenital or bony deformity of the face. Bald individuals will be excluded from the study. For this purpose, three anthropometric landmark points are to be located on a particular subject- trichion, nasion and gnathion. A series of measurements between these landmarks is then taken using carefully specified procedures and measuring instrument like digital Vernier Caliper. The physiognomic facial length and anatomical facial length, these both are different in terms of anthropometry. The physiognomic facial Length (PFL) is the distance between superiorly lowest point on hairline (trichion) on forehead and inferiorly the posterior and lowest point in the lower jaw in a median plane of face (gnathion)¹⁰. And the anatomical facial length (AFL) or total facial length (TFL) is from nasion to gnathion¹⁰.

The facial proportion varies among the different individuals. Using standard anthropometric landmarks, the various anthropometric measurements are determined and compared with *Prakriti* of that particular individual.

Aim and Objective

1. To study a relation between relative height of the forehead (height of forehead in relation of height of physiognomic facial length) and *Ayurvedic Prakriti*.

Materials and Method

For the present study, minimum three-hundred and fifty male individuals of age group 15 to 40 years had been included in the study from the campus and outside campus of Ch. Brahm Prakash Ayurved Charak Sansthan, Khera Dabar, New Delhi.

Inclusion Criteria

- Male individuals healthy and unhealthy both were included.
- Age of participant: 15-40 years had been included in the study from the campus and outside the campus.

Exclusion Criteria

- Any congenital or bony deformity of the face.
- Bald individuals were to be excluded from the study.

Methodology

Type of Study: Cross-sectional study

The Anthropometric Measurements that were recorded:-

1. Maximum Width of all four fingers of right hand (WRH)
2. Maximum Width of all four fingers of left hand (WLH)
3. Total facial Length (TFL)
4. Physiognomic Facial Length (PFL)

The Anthropometric Measurements that were calculated:-

1. Average Width of all four fingers of both hands (AW)/ *Chaturangula Pramana*
2. Measurement of one *Angula*/ *Swanguli Pramana*
3. Height of Forehead (HF)
4. Relative height of Forehead (RHF)

Maximum Width of all four fingers of right and left hand- was measured as linear transverse distance between the medial border of proximal inter phalangeal joint of fifth digit and lateral border

of proximal inter phalangeal joint of second digit. Proximal interphalangeal joint is the articulation of proximal and intermediate phalanx.

Average width of both hands (AW) = Max. Width of all four fingers of right hand (WRH) + Max. Width of all four fingers of left hand (WLH) / 2

$$AW = \frac{WRH + WLH}{2}$$

$$\text{Swanguli Pramana} = \frac{\text{Average width of both hands (AW)}}{4}$$

Total facial Length (TFL) - is defined as the vertical distance from nasion to gnathion.

Nasion is located at the lower border of the eye brows in the median plane where the plane is crossed by the frontonasal suture.

Gnathion is defined as the lowest point on the lower edge of mandible in the median plane.

Physiognomic Facial Length (PFL) - is the linear vertical distance from trichion to gnathion. It is the height of the entire face as viewed from the front.¹¹

Trichion- is defined as the point on the forehead from where the hair limit starts in the median plane.

Gnathion is defined as the lowest point on the lower edge of mandible in the median plane.

Height of forehead (HF) – it is calculating by subtracting the total facial length (TFL) from physiognomic facial length (PFL).

$$HF = PFL - TFL$$

Relative height of forehead (RHF)- it is the height of forehead relative to physiognomic facial length.

$$\text{Relative Height of Forehead} = \frac{\text{Height of forehead}}{\text{Physiognomic Facial Length}} \times \text{Average physiognomic facial length}$$

$$RHF = \frac{HF}{PFL} \times \text{Av. PFL}$$

To find a relation between height of the forehead and *Ayurvedic Prakriti*, we have measured physiognomic facial length and total facial length (anatomical facial length), through which we have calculated the height of forehead. We have also calculated the relative height of forehead which is relative to the physiognomic facial length. According to *Ayurvedic Shastra*, the individuals who have their forehead height more than four *angula*, are considered as they have *mahalalat*. Also, relative height of forehead is 1/3rd to the physiognomic facial length and the individuals who have higher relative height of forehead are also supposed to have *mahalalat*.

Assessment Criteria

Facial length and *Prakriti* had been determined as per protocols. Protocols to determine Height of the forehead were adopted from protocols developed by the ‘project on Ayurgenomics’ of Ch. Brahm Prakash Ayurved Charak Sansthan. *Prakriti* had been determined through *Prakriti* questionnaire adopted from CSIR-*TRISUTRA*. Study participants were enrolled after reading the ‘Subject information sheet’ and obtaining informed consent in ‘Informed consent form’. Finally an analysis was to be made to co-relate relative height of forehead and *Ayurvedic Prakriti*.

Result

The result is based upon association of calculated height of forehead and relative height of forehead with *Ayurvedic Prakriti*.

Result of association of calculated with height of forehead with *Ayurvedic Prakriti*:-

1. The maximum height of forehead is 85.74mm among 350 subjects.
2. The minimum height of forehead is 43.35mm among 350 subjects.
3. Two parameters of *Chaturangula Pramana* are found out from the presented study. One is *Swa-Chaturangula Pramana* of *hasta* and the other is *Swa-Chaturangula Pramana* of *Lalat*. Only 9 subjects, out of 350 subjects possess higher forehead or *Mahalalat* from the parameter of *Swa-Chaturangula Pramana* i.e. more than 79.25mm and 178 subjects among 350 subjects possess higher forehead or *Mahalalat* from the parameter of *Chaturangula Pramana* of *Lalat* i.e. more than 63.15mm. But from both parameters of *Chaturangula Pramana*, they all are distributed to all the *Prakriti* randomly not a specific *Prakriti* like *Kapha Prakriti* as mentioned in hypo dissertation.
4. The higher forehead or *Mahalalat* is considered in terms of more than mean of *Swa-Chaturangula Pramana* i.e. more than 79.25mm and also in terms of more than mean of calculated height of forehead i.e. more than 63.15mm.
5. The mean of calculated height of forehead is 63.15mm.
6. The S.D. and S.E. of calculated height of forehead are 8.05 and 0.43 respectively.
7. Since one of the variable (*Prakriti*) is qualitative, we have used Chi-Square test to test association (correlation). P-Value is greater than 0.05. Hence we conclude that there is no significant association between *Ayurvedic Prakriti* and Calculated Height of forehead.

Result of association of relative height of forehead with *Ayurvedic Prakriti*:-

1. The maximum relative height of forehead is 78.23mm among 350 subjects.
2. The minimum relative height of forehead is 47.25mm among 350 subjects.
3. Not a single person possess higher forehead or *Mahalalat* from the parameter of *Swa-Chaturangula Pramana* i.e. more than 79.25mm but 178 subjects among 350 subjects possess higher forehead or *Mahalalat* from the parameter of *Chaturangula Pramana* of *Lalat* i.e. more than 63.15mm. But they all are distributed to all the *Prakriti* randomly not to a specific *Prakriti*.
4. The mean of relative height of forehead is 63.08mm.
5. The S.D. and S.E. of relative height of forehead are 5.95 and 0.32 respectively.
6. Since one of the variable (*Prakriti*) is qualitative, we have used Chi-Square test to test association (correlation).
7. P-Value is greater than 0.05. Hence we conclude that there is no significant association between *Ayurvedic Prakriti* and Relative Height of forehead.

Discussion

From the presented study, we approach towards the two parameters of obtaining the measurement of one *Angula*. We have recorded the average *Swa-Chaturangula Pramana* i.e. 79.25 mm which is the obtained value from the average width of all the four fingers of both the hands. Also, we have calculated the height of the forehead or *Ayama* of *Lalat* i.e. 63.15 mm which is also *Chaturangula* as mentioned in *Ayurvedic Shastra*. So, by this way, we have obtained two parameters for the measurement of one *Angula*. From the *Swa-Chaturangula* parameter of *hasta*, one *Angula* is about 19.81 mm and from the calculated height of forehead parameter, which is calculated by the subtraction of total facial length (nasion to gnathion) from physiognomic facial length (trichion to gnathion), one *Angula* is about 15.79 mm. According to *Swa-Chaturangula Pramana* of *Hasta*, we have found 9 people out of 350 people, who have their *Chaturangula Pramana* more than 79.25 mm and according to calculated height of forehead parameter, 178 people out of 350 people, have their *Chaturangula Pramana* more than average height of forehead or *Ayama* of *Lalat* i.e. more than 63.15 mm. The 9 people who have their *Chaturangula Pramana* more than 79.25 mm and the 178 people who have their *Chaturangula Pramana* more than 63.15 mm, all these are supposed to have *Mahalalat* and expected to have *Drighayu* according to *Ayurvedic Shastra*. Our hypo dissertation states that *Kapha Prakriti* individuals have higher forehead or *Mahalalat* and also expected to have longer life than other *Prakriti* individuals. But when we assess the *Prakriti* of people who have supposed to have *Mahalalat* and their *Chaturangula Pramana* more than 79.25 mm, these all are related to all the

Prakriti. The people, who are also supposed to have *Mahalalat* and their *Chaturangula Pramana* more than 63.15 mm, also related to all the *Prakriti* not only the *Kaphja Prakriti*. Among 104 *Kaphja* dominant *Prakriti* subjects, 46.15% subjects have their *Chaturangula Pramana* more than 63.15 mm; among 177 *Pittaja* dominant *Prakriti* subjects, 53.67% subjects have their *Chaturangula Pramana* more than 63.15 mm; and among 69 *Vataja* dominant *Prakriti* subjects, 49.28% subjects have their *Chaturangula Pramana* more than 63.15 mm. This observation of *Chaturangula Pramana* from both the parameters i.e. one from parameter of *Swa-Chaturangula Pramana* of *Hasta* and the other from the parameter of calculated height of forehead or *Chaturangula Pramana* of *Lalat*, shows that *Mahalalat* is not only associated with the *Kapha Prakriti* individuals. The *Mahalalat* is associated with all the *Prakriti* whether it is *Vataja*, *Pittaja*, *Kaphaja*, etc.

Conclusion:

- 1) A *Prakriti* assessment proforma which leaves less scope for biases may be adopted.
- 2) There is need to establish exact points of measurements of various parts of body so that concept of *Swa-Angula Pramana* can be further fortified.
- 3) *Mahalalat* and *Kapha Prakriti* individual may be *Drighayu* as per concept in *Shastra* but both of them are not consistently co-existent. So it cannot be said that only *Kapha Prakriti* individuals have *Mahalalat*.

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