

## CONCEPT OF PRAMĀṆA ŚĀRĪRA IN REFERENCE OF SAMA ŚĀRĪRA

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### ABSTRACT

*Pramāṇa śārīra* is a unique contribution of *āyurveda* to the knowledge of measurement, healthy living and diagnosing the disorders. *Āyāmvistārasamam* means *pramāṇa* of *śārīra* in length must be equal to breadth then the *śārīra* is called to be *Sama*. This study was undertaken to appraise the concept of *pramāṇa śārīra* in reference to *sama śārīra* concept in female individuals of Rajasthan and to evaluate the verse which implies that *āyāma* (vertical height) of individual is 84 *aṅgula* and is equal to *vistāra* (arm Span). In the study, anthropometric measurement of breadth of proximal interphalangeal joint of middle finger of right hand (BM) was taken. The data of *āyāma* and *vistāra* of 70 female volunteers were recorded, converted into *aṅgula* and analysed statistically. All Females having 18-30 years of age, same geographical area (Rajasthan) and socioeconomic status were included. Females having any congenital and pathological deformities, amputation of limb and pregnancy were excluded. It was found that measurement of *aṅguli pramāṇa* BM would be average of 1.57 and SD 0.08 (table-1). *Purush āyāma* and *vistāra* would be 101.91 with SD 4.85 and 103.13 with SD 4.89 respectively (table-2, graph-1). *Purush āyāma* and *vistāra* were found to be almost equal with a little difference of less than 2 *aṅgula*. *Vistāra* was more than *āyāma* in maximum volunteers.

**Keywords:** *Aṅgula, Āyāma, Pramāṇa śārīra, Sama śārīra, Vistāra.*

### INTRODUCTION

*Pramāṇa*, which can be considered as one of the ancient method of research is of utmost importance in developing research methodology in *āyurveda*. Ancient sages mentioned the measurements of numerous parts of human body and their importance in various diagnostic and therapeutic measures.<sup>1</sup> These measurements are called by the name *pramāṇa śārīra*, meaning the branch of *śārīra* dealing with *pramāṇa* or measurement. *Caraka* used the word “*parīkṣā*” for “*pramāṇa*.”<sup>2</sup> In context, different types of *pramāṇa* like *aṅjali pramāṇa*, *aṅgula pramāṇa* etc. are mentioned. The essentiality of *pramāṇa* is depicted in fundamentals of *āyurveda* as *māna of hitāyu, ahitāyu, sukhāyu* and

*duḥkhāyu* which constitutes *āyurveda*.<sup>3</sup> These *pramāṇa* are useful in *roga* (disease) & *rogī* (patient) *parīkṣa* (examination). *Caraka* mentioned *daśavidhaparīkṣa vidhi* (tenfold examination) and *pramāṇa parīkṣa* is one among them.<sup>4</sup> *Cikitsā* i.e. *kārya* in the field of medicine, the wise physician should perform the *parīkṣa of kāryadeśa* i.e. *ātura śārīra* with the help of *pramāṇa*.<sup>5</sup> Proportionate body (*Sama śārīra*) shows good health, *ojas, bala, sukha* and longevity. It has been suggested that disproportionate body by the criteria of *aṅgula pramāṇa* predispose to the disease.<sup>6</sup> No two individual are completely alike physically, mental aptitudes, abilities or in vi-

tal reactions. This is because each person occupies a point in space-time different from that of everyone else. Each person thus enters into life with a peculiar viewpoint, mode of reaction to environment and susceptibility to physical and psychic influences. No two persons suffering from the same disease run exactly similar course.<sup>7</sup> *Aṅguli* means finger and *pramāṇa* means measurement. Thus *aṅguli pramāṇa* or finger measurement is the equal to the average breadth of the finger of the individual whose body is being measured. This shows the ingenuity of our *ācāryas*, who, in an era when there were no universally accepted scales or units of measurements, developed a single tool, *svāṅguli* i.e. the fingers of the individual himself as a measuring device and also unit of measurement.

*Pramāṇa śārīra* is the term given to that section which depicts the importance of anthropometry in contemporary sciences. *Pramāṇa* helps in understanding the structural constitution of human body and to differentiate the normal from abnormal quantitatively. *Āyāmavistārasamam* means *pramāṇa* of *śārīra* in length must be equal to breadth then the *śārīra* is called to be *Sama*. This *aṅgula pramāṇa* is a unique identity of *āyurveda* than other sciences and its utility has to be made practical this study was conducted to appraise the concept of *pramāṇa śārīra* in reference to *sama śārīra* concept in female individuals of Rajasthan and to evaluate the verse which implies that *āyāma* of individual is 84 *aṅgula* and is equal to *vistāra* (arm Span).

#### REVIEW OF LITERATURE

*Pramāṇa śārīra* can be described as the knowledge related to the body in context of life-span, measurement of parts and sub-parts of the body and *sāra*.<sup>8</sup> The

body has been described in terms of measurement with own fingers. If man or woman is endowed with this measurement, he attains long life, prosperity, strength, immunity, happiness, supremacy and other desired qualities, with medium and inferior features, the attainment is also accordingly i.e. medium and inferior respectively.<sup>9</sup> The patient should be examined in respect of *prakṛti* (constitution), *vikṛti* (morbidness), *sāra* (constitution of *dhātus*), *saṃhanana* (compactness), *pramāṇa* (measurement), *sātmya* (suitability), *sattva* (psyche), *āhāra śakti* (power of intake and digestion of food), *vyāyāma śakti* (power of exercise) and age for the knowledge of the degree of strength which decide the variations in the quantity of drugs and mode of treatment.

*Aṅgula* derived from root word “*aṅga*” with “*ula*” suffix. In *deśakālamāna* chapter of *Kautilya Arthaśāstra* and *Ādhamalla* commentary on *Śāraṅgadhara Saṃhitā* it is mentioned that *madhyaprakarṣa* (proximal interphalangeal joint) of *madhyama aṅguli* (middle finger) of *madhya kāya puruṣa* is equal to *aṅgula*.<sup>10</sup>

The height of a person, which is 120 *aṅgula*, should be measured from tip of toes to fingers with his hand raised up.<sup>11</sup> The measurement from the sole of the foot to the top of the head is 84 *aṅgula*<sup>12</sup> or 3 ½ *hasta* (forearm) by the individual’s own hand.<sup>13</sup> When *āyāma* (vertical height) should be equal to *vistāra* (horizontal height or arm span) then the *śārīra* is called to be *Sama śārīra*.<sup>14</sup>

The persons having normal measurement of the body are endowed with longevity, strength, immunity, happiness, supremacy, wealth and other desired qualities. Those having body with less or more measure-

ment have qualities contrary to these. If the height of all the organs described is taken together, this exceeds 84 *aṅgula* because a portion of height of one part at a time merges with the height of another part. Therefore the height of each individual part is not to be taken into account while ascertaining the measurement of the whole body, on the other hand, the height of the sole of the foot to the top of head is to be accounted for.

There is a difference in the statement of *Suśruta* and *Caraka* regarding the height of the whole body. According to the former, it is 120 *aṅgula* whereas according to the latter it is 84 *aṅgula*. This difference is due to the difference in the measurement of the basic unit i.e. *aṅguli* which is smallest according to *Suśruta*.

#### **MATERIALS AND METHODOLOGY**

The study was conducted on *puruṣa āyāma* and *puruṣa vistāra* in reference of subject's own *svāṅguli pramāṇa*. Data were collected from 70 healthy females of *Āyurvedic* tertiary care centre of Jaipur. Individuals belonging to same inclusion criteria were selected.

#### **Inclusion criteria**

1. Apparently healthy females of age-group 18 to 30 years and different province of same geographical area (Rajasthan) and socio economic status were selected.

#### **Exclusion criteria**

1. Individuals with congenital deformities and physical disabilities.
2. Individuals with deformities like fracture, pathologies pertaining to musculoskeletal system and other metabolic and endocrine disorders.
3. Individuals who had undergone amputation of limb.
4. Individual with pregnancy.

#### **Instruments used for study**

1. Digital Vernier's calliper.
2. Anthropometer rod.

#### **Assessment criteria**

*Aṅguli pramāṇa* was measured using digital vernier calliper according to reference mentioned in the classics. *Puruṣa āyāma* (vertical height) and *puruṣa vistāra* (arm span) were taken. The measurements were taken in the morning and from right side of the body. The measurements were taken in centimetres for standardization as per metric system, converted into *aṅguli* and analysed statistically.

Parameters, anthropometric landmarks and method of measurements selected for study

1. For *aṅgula pramāṇa*: breadth of middle finger of right hand at the level of proximal interphalangeal joint (BM).
2. For *puruṣa āyāma* (vertical height) and *puruṣa vistāra* (arm span): The level was kept on the foot board, to ensure that the "Anthropometer" was mounted on perfectly horizontal plane. The horizontal bar was approximated to the shoulder height of the volunteer. The volunteer was asked to stand erect on the foot board with the heels together, head in the Frankfurt's plane and both arm extended laterally at the shoulder height. The movable 'Head Board' was brought in contact with the vertex of the head. The volunteer was asked to inhale deeply and at the same time the *āyāma* was recorded. The *vistāra* reading was recorded from tip of middle finger of one hand to the tip of middle finger of another hand. The same procedure was followed for all 70 female volunteer.

#### **Precautions taken during measurements**

1. All instruments should be clean and their precision duly verified.
2. Ring/ ornaments or accessories, foot-

wear were removed.

3. The vernier calliper was not pressed too tight nor left too loose. It was assured that there was no space between the calliper and the finger. The vernier calliper was held perpendicular to the long axis of the finger.
4. For the sake of clarity all measurement should be taken in same unit cms.
5. The volunteer was asked to inhale

deeply and maintain full erect position while taking measurement.

6. All measurements were taken in the morning time.

#### OBSERVATIONS AND RESULTS

**Table-1 Measurement for Breadth of Middle Finger of Right Hand**

Parameter	Range (cms)	Mean (cms)	SD
BM	1.39 – 1.79	1.57	0.08

Breadth of middle finger of right hand at the level of proximal interphalangeal joint varies between 1.39 to 1.75 with a mean of 1.57 cms and SD 0.08.

**Table – 2 Puruṣa āyāma and puruṣa vistāra (in aṅgula) measured by BM.**

Parameter	Samhitā value (aṅgula)	Range	Mean	SD
Āyāma (vertical height)	84	88.97-115.97	101.91	4.85
Vistāra (arm span)	84	92.11-118.66	103.13	4.89

*Puruṣa Āyāma* (vertical height) measured by BM was found to lie between 88.97 to 115.97 with a mean of 101.91 and SD 4.85.

*Puruṣa Vistāra* (arm span) measured by BM was found to lie between 92.11 to 118.66 with a mean of 103.13 and SD 4.89.

to be 1.57cms with SD of 0.08 as shown in *table-1*. With the knowledge of *pramāṇa* one can judge whether the concerned body parts are structurally normal or not.

*Puruṣa āyāma* and *puruṣa vistāra* measurements were not comparable with measurements mentioned in the ancient literature. This difference may be due to small sample size, evolutionary changes but *puruṣa āyāma* and *puruṣa vistāra* were found to be almost equal with a little difference of less than 2aṅgula. *Puruṣa vistāra* found to be more than *puruṣa āyāma*. Variations exist between ethnic origins and racial affiliation in relation to body dimensions and its relations to life-style and energy expenditure. Rajasthan subjects, in general are mostly long stature, being as a student and lives in a hot arid climate hence energy expenditure is more. In order to compensate all these factors, the subject's surface area of body are increased, hence long stature individuals are found in this zone.

#### DISCUSSION

*Sva-aṅgula* is used as unit measurement for measuring *āyāma*, *vistāra*, *pariñaha* and *utsedha* of different parts of human body. *Āyāma* indicates length (*ayamo dairghyam*) *vistāra* is used for width (*vis-tara vyasah*). *Caraka*, *Suśruta*, *Vāgbhatta* have described the *aṅga pratyāṅga pramāṇa* i.e. dimension of various normal body parts in terms of *aṅguli*. But in today's era before measuring those dimensions, the physician should be aware of the unit "aṅguli" in terms of centimetres. In this study, the average of breadth of proximal interphalangeal joint of middle finger of right hand in centimetres was considered as one *aṅguli* which was found

In this study subjects between age group 18 to 30years were selected as this age group subject's growth becomes almost static. All *dhātu* of body is in *samatvāgatavīrya* condition. As age advances, there is a slight decrease in the stature, this is generally regarded to be approx.6mm per decade after the age of 30yrs because of decrease in the elasticity and water content of inter vertebral disc and decrease in muscle tone.

There is tendency of stature to reduce during the period of getting up to going to bed. This variation is due to diurnal changes in water content of disc. Height usually diminishes in the day time and increase in the morning time. So, all the measurements were taken in the morning. The concept of measuring the individual with individual specific unit seems to be more scientific and applicable rather than measuring individual with some other standards. Specificity is the characteristic property of *svāṅguli pramāṇa*. *Āyurveda* in its principles has given prime importance to individualistic approach rather than a generalized.

Application of this concept can be seen in different contexts like in preparing different instruments in field of *śalya*, *śālākya*, *pañcakarma* etc; in describing the anatomy, location, length of body parts with respect to one another; in describing the sites of incision; in describing the taxonomy of herbal medicines and in various other fields of clinical practices. It may be used for future epidemiological studies and serve as non invasive public health marker and alternative method to predict future risk of disease and decide prevention strategy for the same. This may be applicable in present era also and can be utilized in various fields like in sports, designing industries etc. In this way the principle

of *āṅguli pramāṇa* is a unique and individualized concept of *āyurveda* may be compared to contemporary sciences.

## CONCLUSION

Sages of ancient literature firmly explained measurements with individual parameter i.e. by considering the *svāṅgula pramāṇa*. It is specific for every individual irrespective of place, race, sex etc. It seems to be more scientific method of measurement rather than fixing on average basis. The *āṅgula pramāṇa* found to be average of 1.57cms with SD 0.08 (*table-1*). Mean *āyāma* and *vistara* of females of Rajasthan were found to be 101.91 with SD 4.85 and 103.13 with SD 4.89 respectively (*table-2, graph-1*). The probability of a person of having *Sama śāñra* (proportionate body) is more if individual's *ayama* and *vistara* are equal. In the present study *vistāra* was more than *āyāma* in maximum number of people.

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