Gender wise consideration of *Anguli Pramana* in the present era

Research Article

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Abstract

Introduction: *Anguli pramana* is a unique concept in Ayurved. It was stated by acharyas at times when there was no any sort of standardised unit of measurements. Acharyas have mentioned *Anguli pramana* for various parts of the body. In respect of male and female gender, no separate anthropometric values found to be mentioned. Hence, the present study aimed at gender wise consideration of *Anguli pramana*. Method: After seeking ethical permission, 770 healthy participants of both gender between age group 18-50 years in Ahmednagar and Nashik region were selected for the study. Measurements were taken for selected body parts. The middle finger width of the right hand at proximal interphalangeal joint was used as a unit for *Anguli pramana*. Collected data treated with the Student's t test for inference. Result: Measured values for selected parameters when compared with the standard values stated by acharya in both genders found statistically different except for a few i.e., *Pad parinah* and *Pad vistar*. Discussion: Variations in *Anguli pramana* may be due to evolutionary changes and lifestyle in the present era. The present study concluded that *Anguli pramana* is not valid in the present era. Its validity was checked according to gender separately. Though the findings are confined to the selected sample size and selected parameters, it could further be extended to arrive at generalization.

Key Words: *Anguli pramana, Swa-anguli pramana,* Anthropometry, Measured value, Standard value, Gender, Validity.

Introduction

Anguli pramana is a unique concept in Ayurved. It was stated by acharyas at times when there was no any sort of standardised unit of measurements. Acharyas have mentioned *Anguli pramana* for various parts of the body. Acharya Charaka has given emphasis on the concept of '*Sama Ayam Vistar*' i.e., proportionate body. (1) Acharya Charaka has described the *Pramana Sharir* while dealing with the *Dashavidha pariksha* (Tenfold examination). According to him, it can be a useful tool to assess the *Ayu* (life span) and *Bala* (strength) of the patient before proceeding for treatment. (2) Acharya Sushruta has narrated it as the tool to have assessment of Ayu (life span) along with the economic condition of the patient. According to him, person with appropriate pramana of the body parts is bestowed with good health, long life, and prosperity. (3) In respect of male and female gender, no separate anthropometric values found to be mentioned. Hence,

the present study aimed at gender wise consideration of *Anguli pramana*. Our acharyas have stated the anthropometric values about two millennia back. There may be changes in the same may be due to evolutionary as well as lifestyle changes of the human being. (4,5) While doing literature search it was found that not a single study was being carried out based on gender. Hence, based on the thought that if demography wise any significance could be obtained for the selected parameters, this study was performed.

Methodology

Study design

For the present study Observational type of study design was preferred.

Sampling technique

Nonprobability sampling technique was used for selecting samples.

Sample size

For the present study, 770 healthy participants of both male and female gender were selected between age group 18-50 years.

Inclusion criteria

Age group between 18-50 years of both gender, same geographical areas, same socio-economic class.

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Exclusion criteria

Wheelchair bound individuals, person with disability, person having difficulty in standing steady or straight.

Materials

Measuring tape, digital Vernier Caliper, Calculator, Informed Consent Form, Case Record Form.

Assessment parameters

Following parameters were selected for the present study,

·   *Uru ayam* (Length of thigh)
·   *Uru parinah* (Thigh circumference)
·   *Janu ayam* (Length of knee)
·   *Janu parinah* (Knee circumference)
·   *Jangha ayam* (Length of leg)
·   *Jangha parinah* (Leg circumference)
·   *Gulpha parinah* (Ankle circumference)
·   *Pad ayam* (Length of foot)
·   *Pad vistar* (Width of foot)
·   *Pad parinah* (Circumference of foot)

Study was initiated with prior ethical clearance. Total 770 participants of both male and female gender were selected from Ahmednagar and Nashik region. All the selected participants were from age group 18-50 years. Due consent was taken before starting the actual measurements. Body measurements were taken with the help of measuring tape for the selected parameters first in centimetre and later converted into *Anguli pramana*. For *Anguli pramana*, width of the middle finger of the right hand at proximal interphalangeal joint was used as a unit of measurement for which digital Vernier Caliper was used. All the data received was recorded on the case record form. While analysing the data first the participants were segregated into two groups viz. Female participants and Male participants. *Anguli pramana* of selected parameters as stated by acharya Charaka and Sushruta were considered as standard values. The measured mean was compared with this standard value for each selected parameter separately for each group. Student's t test was used for statistical analysis of the data.

Observations and Results

Table-1 Gender distribution of the study population

Gender	Number	Percentage
Female	492	63.90
Male	278	36.10
Total	770	100.00

From Table-1 it is observed that the study includes 63.90% female and 36.10% male participants. It suggests that female participation was more than that of males.

Table-2 Comparison of Actual mean with value by Charaka in Female Participants

No.	Parameter	Std. Value	Actual Mean	S.D.	S. E.	t Value	p Value	Remark
1	*Uru Ayam*	18	28.0358	2.7978	0.1261	79.4839	0.0000	Significant
2	*Uru Parinah*	30	28.6053	3.2696	0.1474	-9.4521	0.0000	Significant
3	*Janu Ayam*	4	5.1135	0.5644	0.0254	43.7171	0.0000	Significant
4	*Janu Parinah*	16	21.7395	2.4663	0.1112	51.5674	0.0000	Significant
5	*Jangha Ayam*	18	22.0941	2.2815	0.1029	39.7636	0.0000	Significant
6	*Jangha Parinah*	16	20.1852	2.3267	0.1049	39.8576	0.0000	Significant
7	*Pad Ayam*	14	13.8514	1.1282	0.0509	-2.9178	0.0037	Significant
8	*Pad Vistar*	6	5.8973	0.5484	0.0247	-4.1498	0.00004	Significant

Note: *Gulpha parinah* and *Pad parinah* not stated by Acharya Charaka.

From Table-2 it can be observed that there was a significant difference between the actual mean recorded and the standard value stated by acharya Charaka for selected parameters in terms of *Anguli pramana*.

Table-3 Comparison of Actual mean with value by Sushruta in Female Participants

No	Parameter	Std. Value	Actual Mean	S. D.	S. E.	t Value	p Value	Remark
1	*Uru Ayam*	18	26.9806	2.7978	0.1261	79.4839	0.0000	Significant
2	*Uru Parinah*	32	27.6018	3.2696	0.1474	-23.0066	0.0000	Significant
3	*Janu Parinah*	14	21.3278	2.4663	0.1112	69.5368	0.0000	Significant
4	*Jangha Ayam*	18	21.5326	2.2815	0.1029	39.7636	0.0000	Significant
5	*Jangha Parinah*	16	19.7282	2.3267	0.1049	39.8576	0.0000	Significant
6	*Gulpha Parinah*	14	13.5222	1.5446	0.0696	-8.0358	0.0000	Significant
7	*Pad Ayam*	14	13.7273	1.1282	0.0509	-2.9178	0.0037	Significant
8	*Pad Vistar*	5	5.8947	0.5484	0.0247	36.2561	0.0000	Significant
9	*Pad Parinah*	14	14.0171	1.4718	0.0664	0.2579	0.7965	Not significant

Note: *Janu Ayam* is not stated by acharya Sushruta.

From Table-3 it can be noticed that there was a significant difference between actual mean recorded and standard value stated by acharya Sushruta for selected parameters except for parameter '*Pad Parinah*'.

Table-4 Comparison of actual mean with value stated by Charaka in Male Participants

No.	Parameter	Std. Value	Actual Mean	S.D.	S. E.	t Value	p Value	Remark
1	*Uru Ayam*	18	28.0358	2.7978	0.1493	47.5425	0.0000	Significant
2	*Uru Parinah*	30	28.6053	3.2696	0.1783	-23.3641	0.0000	Significant
3	*Janu Ayam*	4	5.1135	0.5644	0.1787	2.8628	0.0045	Significant
4	*Janu Parinah*	16	21.7395	2.4663	0.1536	29.8864	0.0000	Significant
5	*Jangha Ayam*	18	22.0941	2.2815	0.1394	18.1782	0.0000	Significant
6	*Jangha Parinah*	16	20.1852	2.3267	0.1257	23.1855	0.0000	Significant
7	*Pad Ayam*	14	13.8514	1.1282	0.0723	-6.8017	0.0037	Significant
8	*Pad Vistar*	6	5.8973	0.5484	0.0771	-1.4224	0.1561	Not significant

Note: *Gulpha parinah* and *Pad parinah* not stated by acharya Charaka.

From Table-4 it can be observed that there was a significant difference between average mean recorded and standard value stated by acharya Charaka for selected parameters except for parameter '*Pad vistar*'.

Table-5 Comparison of actual mean with value stated by Sushruta in Male Participants

No	Parameter	Std. Value	Actual Mean	S. D.	S. E.	t Value	p Value	Remark
1	*Uru Ayam*	18	25.1131	2.4901	0.1493	47.5425	0.0000	Significant
2	*Uru Parinah*	32	25.8259	2.9734	0.1783	-34.5588	0.0000	Significant
3	*Janu Parinah*	14	20.5992	2.5613	0.1536	42.8826	0.0000	Significant
4	*Jangha Ayam*	18	20.5389	2.3246	0.1394	18.1782	0.0000	Significant
5	*Jangha Parinah*	16	18.9195	2.0957	0.1257	23.1855	0.0000	Significant
6	*Gulpha Parinah*	14	13.6678	1.6801	0.1008	-3.2908	0.0011	Significant
7	*Pad Ayam*	14	13.5077	1.2046	0.0723	-6.8017	0.0000	Significant
8	*Pad Vistar*	5	5.8901	1.2863	0.0771	11.5167	0.0000	Significant
9	*Pad Parinah*	14	13.3111	1.1711	0.0702	-9.7905	0.0000	Significant

Note: *Janu Ayam* is not stated by acharya Sushruta.

From Table-5 it can be observed that there was a significant difference between the actual mean recorded and the standard value stated by acharya Sushruta for selected parameters.

Discussion

While dealing with the gender wise consideration of *Anguli pramana*, first the data was segregated gender wise as male and female participants. Thus, the total sample size of 770 was subdivided into two groups, female participants (492) and male participants (278) (Table-1).

Consideration of *Anguli pramana* in Female participants

Remarkable difference was seen between the actual mean recorded in female participants and the standard value stated by acharya Charaka for selected parameters (Table-2). Hence, *Anguli pramana* stated by acharya Charaka may not be considered valid for this subgroup in the present era. Likewise, when the actual mean recorded in female participants compared with the standard value stated by acharya Sushruta a significant difference was observed in this subgroup except for parameter '*Pad parinah*' (foot circumference) (Table-3). From this it can be consider that *Anguli pramana* stated by acharya Sushruta may not be considered valid in the present era for selected parameters.

Consideration of *Anguli pramana* in Male participants

When the actual mean obtained for each selected parameter in male participants was compared with the standard value stated by acharya Charaka a significant difference was found except for parameter 'Pad vistar' (width of foot) (Table-4). So, it can be considered that *Anguli pramana* stated by acharya Charaka for selected parameters may not be valid in the present era for this subgroup. Similarly, when the actual mean obtained for each selected parameter in male participants was compared with the standard value stated by acharya Sushruta a significant difference was found (Table-5). So, it can be considered that *Anguli pramana* stated by acharya Sushruta for selected parameters may not be valid in the present era for this subgroup.

There may be some limitations of the study like due to voluntary participation the number of females was more than that of males. The results obtained and the generalizations arrived at are based on the selected sample size as well as for the selected parameters.

Conclusion

On reviewing ancient literature, it was found that no separate *Anguli pramana* values are mentioned separately according to male and female gender. Hence, the present study was planned to study *Anguli pramana* in both genders. Results obtained at the end of the study concluded that *Anguli pramana* stated in ancient classics may not be considered valid for both genders in the present era. This may be due to evolutionary changes as well as changes in the lifestyle of the human being in the present era. The conclusion at which the researcher arrived at is merely applicable to the sample size and the selected parameters. Hence, the variation in

the sample size and the proportionate distribution of the population in demographic parameters could be other perspective. The study can be continued further to generalize the concept.

References

1. Yadavji Trikamji. Charaka Samhita revised by Charaka and Dridhabala with Ayurved Dipika commentary of Chakrapanidatta. 5th edition. Varanasi; Choukhambha Sanskrit Sansthan; 2008.738p

2. Yadavji Trikamji. Charaka Samhita revised by Charaka and Dridhabala with Ayurved Dipika commentary of Chakrapanidatta. 5th edition. Varanasi; Choukhambha Sanskrit Sansthan; 2008.739p

3. Yadavji Trikamji. Sushruta Samhita of Acharya Sushruta with Nibandha Sangraha commentary of Dalhanacharya. 8th edition. Varanasi; Choukhambha Orientalia; 2008.824p

4. [Internet] https://enwikipedia.org/wiki/American_Journal_of_Physical_Anthropology cited on 04-02-2021, 20.54 IST

5. Gert S, Louise B, Evolutionary perspectives of Human height variation: Biological Reviews. Cambridge Philosophical Society. First published on 20-12-2014. February, 2016;91(1);206-234

6. Visave P, Shukla D. Standardization of Anguli Pramana. IJAAR March-April 2020; IV(VII); 742-746.

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